Publications

of the

LAKE STATES FOREST EXPERIMENT STATION

1923 - 1955

assembled by
L. P. OLSEN *and*
H. A. WOODWORTH

STATION PAPER NO. 39, JULY 1956
LAKE STATES FOREST EXPERIMENT STATION
M. B. DICKERMAN, DIRECTOR
U.S. DEPARTMENT OF AGRICULTURE - FOREST SERVICE

FOREWORD

One of the responsibilities of research organizations is to keep others informed as to the status of present work, plans for the future, and research findings. These responsibilities are accomplished in part by the Lake States Forest Experiment Station through correspondence, personal contact, group meetings, and field trips in experimental areas. Our chief means, though, of disseminating research findings is through publication.

This Station Paper lists the publications of the Lake States Forest Experiment Station since it was established in 1923. A study of the titles over the past 33 years and their dates of publication gives a fair indication of the advance in knowledge of forestry practices in the territory served by the Station: Michigan, Wisconsin, Minnesota, and North Dakota.

Although this list is limited to papers written by, or in collaboration with, Lake States personnel, many of the studies reported on were conducted in cooperation with others: forestry schools, state conservation departments, private industry, and federal agencies.

Originally the compilation of publications through 1951 was made by Helen A. Woodworth and published as Station Paper 15. The material in the following pages was assembled by Lucille P. Olsen, editor. She has broadened the classification scheme to include the newer areas of research and has added publications issued since 1951.

M. B. Dickerman

M. B. Dickerman
Director

TABLE OF CONTENTS

	Page
ABOUT THE LISTS	1
CLASSIFIED LIST	3
General forestry	3
Artificial regeneration	11
Stand improvement	21
Harvest cutting and natural regeneration	25
Management of timber types--comprehensive summaries	30
Forest genetics	31
Shelterbelts	35
Soils and water	38
Fire	45
Forest insects	48
Forest disease	52
Forest wildlife	52
Silvics, botany, ecology, and physiology	56
Estimation of timber volume	60
Estimation of timber growth and yield	62
Sampling and research methodology	65
Timber resource	67
Timber production statistics	75
Forest economics	77
Timber utilization and marketing	84
TECHNICAL NOTES	91
Artificial regeneration	91
Stand improvement	95
Harvest cutting and natural regeneration	97
Forest genetics	101
Shelterbelts	102
Soils and water	103
Fire	103
Forest insects	105
Forest diseases	105
Forest wildlife	105
Silvics, botany, ecology, and physiology	107
Estimation of timber volume	108
Estimation of timber growth and yield	111
Sampling and research methodology	112
Timber resource	112
Timber production statistics	113
Forest economics	116
Timber utilization and marketing	117

Page

STATION PAPERS..... 120

MISCELLANEOUS REPORTS..... 123

ASPEN REPORTS..... 126

AUTHOR INDEX..... 128

Publications of the Lake States Forest Experiment Station 1923-1955

ABOUT THE LISTS

Copies of most of the publications listed in this bibliography can be found in forestry school libraries or in periodicals. An asterisk (*) preceding the title of a publication indicates that copies are still available for distribution. They can be obtained by writing to the Lake States Forest Experiment Station, St. Paul Campus, University of Minnesota, St. Paul 1, Minnesota.1/

This publication list includes:

1. A classified list arranged by subject matter, by author within subject matter, and under each author by date. All publications are shown except brief Technical Notes, the material for which has usually been included in later, more comprehensive reports. Each item was placed in the category to which it seemed most closely related, and appears only once. A few cross-reference notes were appended at the end of some of the categories to guide the reader.

2. A list of Technical Notes arranged in the same manner as the above. These are 1- or 2-page processed reports, generally on a phase of a comprehensive project.

3. A list of Station Papers, which contain reports of research findings on studies of considerable scope.

4. A list of Miscellaneous Reports. These publications differ from Station Papers in that they are of more restricted interest or are based largely on compilation of results from other sources.

1/ The Station is maintained by the Forest Service, U. S. Department of Agriculture, in cooperation with the University of Minnesota.

5. A list of the Aspen Reports published during 1947-51. This series, a cooperative effort among a number of agencies, brought together what was then known about aspen.

6. An Author Index noting the pages on which reports by each author (Lake States personnel only) are to be found.

CLASSIFIED LIST

General Forestry

AHERN, G. P.; MARSHALL, ROBERT; MUNNS, E. N.; PINCHOT, GIFFORD; SHEPARD, WARD; SPARHAWK, W. N.; and ZON, RAPHAEL
1930 A letter to foresters. Jour. Forestry 28: 456-458.

ARBOGAST, CARL F., and STOECKELER, J. H.
1947 Norwegian forester visits the United States. Jour. Forestry 45: 130-131.

AVERELL, JAMES L.
1927 The Society of Swedish Foresters. Jour. Forestry 25: 577-579.

____ and HUNTTING, SELDON T.
1928 Education beyond the four-year college course in forestry. Jour. Forestry 26: 1051-1054.

____
1928 European study for foresters. Timberman 29(3): 178-186.

____
1928 Life membership in the Society of American Foresters. Jour. Forestry 26: 415-416.

____
1928 Review of "Forestry in Sweden" by Emil Kekich. Jour. Forestry 26: 369.

____
1928 A Swedish forest week. Timberman 29(5): 184.

CHASE, CLARENCE D.
1947 Southern Minnesota sub-section meets in farmwoods. Jour. Forestry 45: 616-617.

CUNNINGHAM, R. N.
1944 Dr. Raphael Zon to retire Sept. 1 after 43 years' active work with United States Forest Service. Miss. Val. Lumberman 75(3): 11-12.

____
1953 Credit where credit is due. Jour. Forestry 51: 36.

LAKE STATES FOREST EXPERIMENT STATION

1929 Forestry research program inaugurated. In 45th Ann. Rpt. Univ. of Wis.

_____ 1930 The Upper Peninsula Forest Experiment Station: What it is and what it does. Unpaged, illus.

_____ 1938 Chippewa Field Station. 16 pp. (Processed.)

_____ and COMMITTEE ON FORESTRY, NATIONAL RESEARCH COUNCIL 1938 Forest Research in the United States. 138 pp. (Processed.)

_____ 1945 Annual report[2/] for 1944. 14 pp. (Processed.)

_____ 1946 Annual report for 1945. 20 pp. (Processed.)

_____ 1947 Annual report for 1946. 21 pp. (Processed.)

_____ 1948 Annual report for 1947. 31 pp. (Processed.)

_____ 1949 Annual report for 1948. 34 pp., illus. (Processed.)

_____ 1950 Annual report for 1949. 32 pp., illus. (Processed.)

_____ 1951 Annual report for 1950. 30 pp., illus. (Processed.)

_____ 1952 Annual report for 1951. 36 pp., illus. (Processed.)

_____ 1953 Annual report for 1952. 43 pp., illus. (Processed.)

_____ * 1953 The work area and program of the Headwaters Forest Research Center. L. S. Misc. Rpt. 24, 17 pp., illus.

_____ 1954 Annual report for 1953. 54 pp., illus. (Processed.)

2/ Annual reports previous to 1944 did not receive general distribution.

LAKE STATES FOREST EXPERIMENT STATION
* 1955 Annual report for 1954. 58 pp., illus. (Processed.)

MITCHELL, J. A.
1924 Henry Ford's logging operation. Amer. Lumberman 2539: 60-61. Jan. 12.

MOWAT, EDWIN L.
1928 Some of the activities of the Upper Peninsula National Forest Experiment Station. Devlpmt. Bur. News. Aug. 1.

_____
1928 The Upper Peninsula Forest Experiment Station: What it does and aims to do. Mich. State Col. Forestry Ann.

NEFF, L. P.
1947 A forest research center for northern Minnesota. Conserv. Volunteer 10(56): 49-50. Also Lake States Timber Dig. 1(11): 9.

NEETZEL, JOHN R.
* 1947 A survey of farm-forestry research and demonstration needs in southern Minnesota. L. S. Misc. Rpt. 1, 22 pp., illus. (Processed.)

ROE, E. I.
1946 Some lesser known uses of forest seeds and fruit. Chemurg. Dig. 5(5): 108.

_____
1953 1952 winter meeting Upper Mississippi Valley Section. Jour. Forestry 51: 378-379.

_____
1953 Research Center increases studies of growing balsam pulp. Timber Prod. Bul. (Duluth) 8(9): 10-11. Also Lake States Timber Dig. 7(10): 5, 8; 1954.

SAUER, K. W.
1936 The Kawishiwi Experimental Forest. Ames Forester (Iowa State Col.).

STOECKELER, J. H.
1945 Some notes on forestry in Argentina. Jour. Forestry 43: 760-761.

_____
1946 The epic of Minnesota's forests. Amer. Forests 52(2): 62-63.

STOECKELER, J. H.
1946 A Greek looks at U. S. forestry. Jour. Forestry 44: 762-763.

_____
1946 Wisconsin gets research center. Miss. Val. Lumberman 77(48): 8-9.

_____
1946 Wisconsin's new forest research center gets underway: Basic program outlined. Tree Tips, p. 1. Nov.

_____
1947 Federal experimental forest is established. Timber Prod. Bul. (Upper Mich. and No. Wis.) 51: 7. June 28.

_____
1947 The Northern Wisconsin Forest Research Center. Lake States Timber Dig. 1(12): 5, 15.

_____
1950 Oslo community forest. Tree Tips, p. 4. May.

_____
1950 The work and findings of Northern Lakes Forest Research Center. Timber Prod. Bul. (Upper Mich. and Wis.) 91: 10-12. Oct.

_____
1954 Research in the Lake States. Ames Forester (50th Anniv. Issue, Iowa State Col.), pp. 19-22, illus.

VARNEY, RICHARD, M., and CUNNINGHAM, R. N., et al.
1953 Ryukyu Islands forest situation. U. S. Civil Admin. of the Ryukyu Islands, Spec. Bul. 2, 123 pp., illus.

WACKERMAN, A. E.
1927 Forestry needs a building. Univ. of Minn. Gopher Countryman. March.

WHITE, H. G.
1941 Home-grown foresters and the Minnesota lumber industry. Univ. of Minn. Gopher Peavey, pp. 54-58.

ZEHNGRAFF, PAUL J.
1950 Forestry in Denmark. Jour. Forestry 48: 681-684.

ZON, RAPHAEL
1922 The next great step ahead in forestry. Lumber 69 (922): 48.

ZON, RAPHAEL

1923 Lake States Forest Experiment Station and its field. Lumber World Rev. 49(9): 61-63.

1924 Research problems in forestry in Lake region. Mich. Alumnus 30: 916-919.

1925 Engineering aspects of forestry. Jour. Agr. Engin. Also Idaho Forester 8: 5-7, 36-37. 1926.

1925 Experiment Station work in Lake States. Lumber World Rev. 48(3): 26-27.

1925 The goal of research in forestry. Univ. of Minn. Gopher Countryman 2(6): 14-16.

1925 Practical results from the forest experiment stations. Natl. Lumber Mfrs. Assoc. Rpt. 23: 6-7.

1925 The work of the Lake States Forest Experiment Station. Minn. Hort. 53: 137-139.

1926 Need for research in forestry. Timberman 27(3): 50-54.

1926 The Paul Bunyan of the future. Univ. of Minn. Gopher Countryman 3(6): 11-12.

1926 Plans for Upper Peninsula Branch Field Station. Devlpmt. Bur. News. April.

1927 Quo vadimus. Jour. Forestry 25: 925-927.

1927 Our forest schools. Jour. Forestry 25: 252-256.

1928 Are foresters biologists or economists? Jour. Forestry 26: 281-282.

ZON, RAPHAEL

1928 Forest research bill passed. Among Ourselves, Univ. of Wis. June.

_____ 1928 A new milestone in forest research. Forestry News Dig. May 19.

_____ 1928 The passing of the old-time forester. Jour. Forestry 26: 561-563.

_____ 1929 Forests and forestry. Encycl. Brittanica, Vol. 9, Ed. 1944, pp. 497-507.

_____ 1930 Where white pine once was king. Nature Mag. 15: 310-313, 341-342, illus.

_____ 1931 Forests. Encycl. of the Social Sci., Vol. VI, pp. 382-387. Dec.

_____ 1931 The Society comes of age. Jour. Forestry 29: 308-315. Also Cong. Rec. Jan.

_____ 1933 Our Thanksgiving. Minn. Conserv., p. 1. Nov.

_____ 1934 Back of it all--forest research. Forestry News Dig. June.

_____ 1934 Conservation and the farmer. Minn. Conserv. July.

_____ 1934 Our conservation Presidents. Minn. Conserv., p. 1. Feb.

_____ 1938 Forest primeval. Review of "German Forestry" by Franz Heske. New Repub., pp. 55-56. Aug. 17.

_____ 1938 New trends in German forestry. Review of "German Forestry" by Franz Heske. Sci. 88(2281): 259-261.

ZON, RAPHAEL
1941 Forest research points the way. Conserv. Volunteer 2(11): 10-13.

_____ 1942 The vast gulf between democracy and tyranny. Land Policy Rev. 5(5): 3-6.

Artificial Regeneration

AAMODT, E. E.
1941 A stem-caliper gauge for nurseries. Jour. Forestry 39: 728.

BALDWIN, HENRY I., and SHIRLEY, HARDY L.
* 1936 Forest seed control. Jour. Forestry 34: 653-663.

_____ and _____
1936 A forest seed program for the United States. Jour. Forestry 34: 766-770.

BATES, C. G.
1929 Some problems of seed production, collection, and distribution. Forestry Chron.: 5(1): 17-29.

_____
* 1929 Why nurserymen prefer southern seeds. L. S. Tech. Note 19, 1 p. (Processed.) Also Jour. Forestry 28: 232-233. 1930.

_____ 1930 One-year storage of white pine seed. Jour. Forestry 28: 571-572.

_____ 1931 McHenry County may have pine forests. No. Dak. Outdoors 1(3): 2-4. (Processed.)

_____ 1931 A new principle in seed collecting for Norway pine. Jour. Forestry 29: 661-678, illus.

_____ and RUDOLF, PAUL O.
* 1938 Creating new forests. Jour. Forestry 36: 844-846.

CHAPMAN, ARTHUR G.; McQUILKIN, WILLIAM E.; MIROV, N. T.; ROE, EUGENE I.; RUDOLF, PAUL O.; and WAKELEY, PHILIP C.
1948 Woody-plant seed manual. U. S. Dept. Agr. Misc. Pub. 654, 416 pp., illus.

ENGSTROM, H. E., and STOECKELER, J. H.
* 1941 Nursery practice for trees and shrubs suitable for planting on the prairie plains. U. S. Dept. Agr. Misc. Pub. 434, 159 pp., illus.

EYRE, F. H.
1933 Aspen competition in Norway pine plantations. Jour. Forestry 31: 318-321.

FISHER, P. L.; BRIGGS, A. H.; and SHIRLEY, H. L.
1936 Improving tree seed germination. 5 pp. (Processed.)

GEVORKIANTZ, S. R.
1928 Determination of forest seed quality. Jour. Forestry 26: 1043-1046.

_____ and RUDOLF, P. O.
1933 Translation of "Oblsedovanie i issledovanie lesnikh kultur (Examination and analysis of forest plantations)," by Prof. N. P. Kobranov. U. S. Forest Serv. Translation 121. (Processed. On file at U. S. Forest Serv.)

KITTREDGE, JOSEPH, JR.
1924 Reforestation: What is the answer in the Lake States? Lumber World Rev. 47(9): 94-95.

_____
1927 Trees planted for timber often do best on worn-out farmland. U. S. Dept. Agr. Yearbook 1927: 655-656.

_____
1929 Forest planting in the Lake States. U. S. Dept. Agr. Bul. 1497, 88 pp., illus.

LAKE STATES FOREST EXPERIMENT STATION
* 1937 Does freezing injure planting stock? L. S. Tech. Note 132, 1 p. (Processed.) Also Jour. Forestry 36: 1244-1245. 1938.

_____
* 1937 Is spring or fall the better planting season? L. S. Tech. Note 131, 1 p. (Processed.) Also Jour. Forestry 36: 1160-1161. 1938.

LAKE STATES FOREST EXPERIMENT STATION
* 1937 Watering reduces soil-surface temperatures. L. S. Tech. Note 126, 2 pp. (Processed.) Also Jour. Forestry 36: 611-612. 1938.

LEBARRON, R. K.; FOX, GORDON; and BLYTHE, R. H., JR.
1938 The effect of season of planting and other factors on early survival of forest plantations. Jour. Forestry 36: 1211-1215.

_____ and ROE, EUGENE I.
* 1945 Hastening the extraction of jack pine seeds. Jour. Forestry 43: 820-821.

MITCHELL, J. A.
1924 Cutover areas need reforestation. Univ. of Minn. Gopher Countryman. June.

RALSTON, ROBERT A.
1953 Some effects of spacing on jack-pine development in Lower Michigan after twenty-five years. Mich. Acad. Sci., Arts, and Letters Papers (1952 meeting) 38: 137-143.

ROE, EUGENE I.
* 1941 Effect of temperature on seed germination. Jour. Forestry 39: 413-414.

_____
* 1941 Longevity of red pine seed. Minn. Acad. Sci. Proc. (1940 meeting) 8: 28-30, illus.

_____
1946 Viability of acorns. Amer. Nurseryman 84(12): 24-26.

_____
1948 Balsam fir seed: Its characteristics and germination. L. S. Sta. Paper 11, 13 pp., illus. (Processed.)

_____
1948 Viability of white pine seed after 10 years of storage. Jour. Forestry 46: 900-902.

_____
* 1949 Dense seed spots produce spindly jack pine seedlings. Jour. Forestry 47: 480. Also L. S. Tech. Note 306, 1 p. (Processed.)

ROE, EUGENE I.
1949 Frozen red pine planting stock shows fair survival. Jour. Forestry 47: 566.

1951 Early release from aspen improves yield of pine plantations. Timber Prod. Bul. (Duluth) 7(2): 10.

* 1951 Seeding jack pine after fire in Minnesota. Forest and Outdoors 47(10): 20-22, illus. Also Timber Prod. Bul. (Duluth) 7(12): 4-6. 1952.

* 1955 Forest plantation release--what it is, how to do it. L. S. Misc. Rpt. 33, 29 pp., illus. (Processed.)

RUDOLF, PAUL O., and GEVORKIANTZ, S. R.
1933 After planting--what? Jour. Forestry 31: 441-442.

1934 Review of "Tietoja metsänviljelystoiminnasta Suomessa 1923-1930;" (German summary) "Uber die forstkulturtätigkeit in Suomi (Finland) 1923-1930," by Erkki K. Cajander. Jour. Forestry 32: 362-364.

1934 Scientific foundation for reforestation. The Bul. (Reg. 9) 6(4): 15-17.

1935 History of forest planting in the Lake States. Minn. Conserv. 29: 12-13, 23-24. Oct.

and GEVORKIANTZ, S. R.
1935 Seedlings or transplants. Jour. Forestry 33: 979-984.

1936 Note on seed germination of European mountain ash. Jour. Forestry 34: 533-534.

1937 Delayed germination in American elm. Jour. Forestry 35: 876-877.

1937 Lessons from past planting in the Lake States. Jour. Forestry 35: 72-76.

RUDOLF, PAUL O.

1937 Sixty years of planting shows tree growth in Wisconsin. Wis. Agr. & Farmer 64(4): 32-35, illus.

_____ 1938 Diagnosing plantation mortality. Mich. Acad. Sci., Arts, and Letters Papers (1937 meeting) 23: 333-338.

_____ 1939 Why forest plantations fail. Jour. Forestry 37: 377-383.

_____ 1940 Further comments on "Why forest plantations fail." Jour. Forestry 38: 442-443.

_____ 1940 Review of "Uber saatgutprüfung auf biochemischem wege (Seed-testing by biochemical methods)," by Kin-Shen Hao. Jour. Forestry 38: 979.

_____ 1941 When are pine cones ripe? Minn. Acad. Sci. Proc. (1940 meeting) 8: 31-38, illus.

_____ 1946 Mechanizing forest planting. Univ. of Minn. Gopher Peavey, pp. 9-11.

_____ * 1946 The reforestation job in the Lake States--a new estimate. L. S. Sta. Paper 4, 9 pp. (Processed.) Also Lake States Timber Dig. 1(12): 8, 10. 1947.

_____ 1947 How much reforestation is needed in Wisconsin? Tree Tips, p. 1, 2. April.

_____ 1947 Machine-made forests. U. S. Dept. Agr. Yearbook 1943-1947: 843-846.

_____ 1947 Machines for forest planting. Canad. Pulp and Paper Assoc., Woodlands Sect. Index 943 (F-2), 5 pp., illus.

_____ 1947 Minnesota needs huge tree-planting program. Minn. Conserv. Volunteer 10(61): 14-17. Also Lake States Timber Dig. 2(12): 6, 8. 1948.

RUDOLF, PAUL O.

1947 Review of "Forestry practice--a summary of methods of establishing forest nurseries and plantations with advice on other forestry questions for owners, agents, and foresters," by Forestry Comn. (England). Jour. Forestry 45: 297-298.

1947 Tree species planted in the Lake States. Lake States Timber Dig. 1(22): 9.

1947 Wisconsin leading in reforestation. Lake States Timber Dig. 1(18): 8.

* 1949 First the seed, then the tree. U. S. Dept. Agr. Yearbook 1949: 127-135.

* 1949 Pelleted seed for reforestation. L. S. Misc. Rpt. 5, 13 pp. (Processed.)

1949 Review of "Boomzaden: Handleiding inzake het oogsten, behandelen, bewaren en unitzaaien van boomzaden (Tree seed: A guide to its collection, treatment, storage, and sowing)," Nederlansche Boschbouw Vereeniging. Jour. Forestry 47: 225-226.

1949 Review of "Seed storage with particular reference to the storage of seed of Indian forest plants," by T. V. Dent. Jour. Forestry 47: 656-657.

* 1950 Certifying forest seeds. L. S. Misc. Rpt. 14, 6 pp. (Processed.)

* 1950 Cold soaking--a shortcut substitute for stratification? Jour. Forestry 48: 31-32.

* 1950 Forest plantations in the Lake States. U. S. Dept. Agr. Tech. Bul. 1010, 171 pp., illus.

1950 Forest seed collectors, processors, and dealers in the Lake States. L. S. Misc. Rpt. 8, 3 pp. (Processed.)

RUDOLF, PAUL O.
* 1950 A test of pelleted jack pine seed. Jour. Forestry 48: 703-704.

_____
* 1951 Stand density and the development of young jack pine. Jour. Forestry 49: 254-255.

_____
1952 Cold-soaking of jack pine seeds. Jour. Forestry 50: 626.

_____
* 1952 Low temperature seed storage for western conifers. Third Bien. Forest Tree Nurserymen's Meeting, Proc. 1952: 43-49. Also L. S. Misc. Rpt. 20, 8 pp. (Processed.)

_____
1953 Plows to precede a tree planting machine. U. S. Forest Serv. Tree Planters' Notes 14: 10, illus. (Processed.)

SHIRLEY, HARDY L.
1935 Review of "Opredelenie vskhozhesti semian drevesnykh porod metodom okrashivania (Determination of the germination capacity of forest tree seeds by the dyeing method)," by E. Y. Shafer-Safonova, M. I. Kalashnikova, and A. S. Kostromina. Jour. Forestry 33: 640-641.

_____
* 1936 Seed extraction, storage, and testing in central Europe. 1 p. (Processed.)

_____
* 1937 Direct seeding in the Lake States. Jour. Forestry 35: 379-387.

_____ and MEULI, LLOYD J.
* 1938 Influence of foliage sprays on drought resistance of conifers. Plant Physiol. 13: 399-406.

_____
* 1939 Comments on "Some new aspects of seed certification" by Henry I. Baldwin. Jour. Forestry 37: 35-36.

_____ and MEULI, LLOYD J.
1939 Influence of moisture supply on drought resistance of conifers. Jour. Agr. Res. 59: 1-22.

SHIRLEY, HARDY L., and MEULI, LLOYD J.
* 1939 The influence of soil nutrients on drought resistance of two-year-old red pine. Amer. Jour. Bot. 26: 355-360.

_____ 1939 Review of "The growth and nutrition of white pine (Pinus strobus L.) seedlings in cultures with varying nitrogen, phosphorous, potassium, and calcium," by H. L. Mitchell. Jour. Forestry 37: 587-588.

_____ * 1941 Restoring conifers to aspen lands in the Lake States. U. S. Dept. Agr. Tech. Bul. 763, 36 pp., illus.

STOECKELER, J. H.
1933 The use of fertilizers in the forest nursery. U. S. Forest Serv. Forest Worker. Jan.

_____ 1934 Review of "Forsök med vestamerikanske traeslag (Experiments with western North American trees)" (German summary), by Oscar Hagem. Jour. Forestry 32: 113-114.

_____ and BASKIN, L. C.
* 1937 The Denbigh disc scarifier, a new method of seed treatment. Jour. Forestry 35: 396-398, illus.

_____ 1937 Measuring soil moisture content in the forest nursery. 4 pp. (Processed.)

_____ and KLUENDER, W. A.
1938 The hydraulic method of excavating root systems of plants. Ecology 19: 355-369.

_____ and JAY, JAMES W.
1938 Some observations on Canadian nurseries and reforestation activities. Planting Quart. 7(4): 7-10.

_____ and SUMP, A. W.
1940 Successful direct seeding of northern conifers on shallow-water-table areas. Jour. Forestry 38: 572-577, illus.

_____ and AAMODT, EINAR
1940 Use of tensiometers in regulating watering in forest nurseries. Plant Physiol. 15: 589-607, illus.

STOECKELER, J. H.
1940 Watering in the nursery. Plains Forester 5(2): 6-8.

_____ and LIMSTROM, G. A.
1942 Ecological factors influencing reforestation in northern Wisconsin. Ecol. Monog. 12: 191-212, illus.

_____ and _____
1942 A site classification for reforestation on the national forests of Wisconsin. Jour. Forestry 40: 308-315.

_____
* 1947 When is plantation release most effective? Jour. Forestry 45: 265-271, illus.

_____
1948 Killing nursery weeds with oil sprays. Amer. Nurseryman 88(9): 13. Also L. S. Tech. Note 290, 1 p. (Processed.)

_____
1948 Recovery of winter injured conifers. Amer. Nurseryman 88(9): 9, 54.

_____
* 1949 Control of weeds in conifer nurseries by mineral spirits. L. S. Sta. Paper 17, 23 pp. (Processed.)

_____
1949 Killing weeds with mineral spirits. Amer. Nurseryman 89(7): 11, 55, 56.

_____
1949 Mineral spirits as selective herbicides in conifer nurseries. Sci. Monthly 68: 419-420.

_____ and RUDOLF, PAUL O.
* 1949 Winter injury and recovery of conifers in the Upper Midwest. L. S. Sta. Paper 18, 20 pp. (Processed.)

_____ and LIMSTROM, G. A.
* 1950 Reforestation research findings in northern Wisconsin and Upper Michigan. L. S. Sta. Paper 23, 34 pp., illus. (Processed.)

_____; RCE, E. I.; and SOWASH, R. O.
1951 Allyl alcohol for weed control in forest nurseries. U. S. Forest Serv. Tree Planters' Notes 7: 10-12. (Processed.)

STOECKELER, J. H.

1951 Control of weeds in the nursery by chemicals. U. S. Forest Serv. Tree Planters' Notes 7: 14-17. (Processed.)

* 1951 Hydrocarbon content and storage period affect toxicity of mineral spirits used as selective herbicides for red pine nursery beds. Jour. Forestry 49: 647-649.

1951 Killing weed seeds. Amer. Nurseryman 93(8): 10.

1951 Survival experiments show Norway pine, white spruce transplant stock values. Tree Tips, p. 4, illus. March.

* 1952 Control of weeds in forest nurseries with mineral spirits. Adv. in Chem. Ser. 7: 84-90.

1953 Review of "Forstsamen-gewinnung und forstpflanzen-anzucht in den U. S. A. und in Deutschland (Tree seed collecting and forest plant production in the U. S. and Germany)," by Ernst Pein. Unasylva 7: 144.

1954 Time-saving use of an automatic scale. U. S. Forest Serv. Tree Planters' Notes 18: 22. (Processed.)

1955 An improved cylindrical seed spot screen and setter. U. S. Forest Serv. Tree Planters' Notes 20: 7-8, illus. (Processed.)

WARE, E. R.

1936 Planting and care of trees in South Dakota. So. Dak. State Col. Ext. Cir. 356, 56 pp., illus.

ZEHNGRAFF, PAUL

1948 Brush away. Tree Tips, p. 4. Feb.

1948 Brush removal aids reforestation. Lake States Timber Dig. 2(14): 12, illus.

NOTE: Additional material can be found in other categories such as Wildlife (Aldous--Some forest-wildlife problems in the Lake States); and Soils and Water (Bates--Reforestation and flood control).

Stand Improvement

ARBOGAST, CARL, JR.
* 1950 How much does felling large cull trees damage the understory? Pulp and Paper Mag. Canada 51(12): 190. Also L. S. Tech. Note 337, 2 pp. (Processed.)

AREND, JOHN L.
1951 Can hardwood roots transmit chemical herbicides? Forest Farmer 11(1): 15.

_____
1953 Chemical frill girdling for control of undesirable hardwood trees. L. S. Misc. Rpt. 21: 30-34. (Processed.)

_____ and COULTER, L. L.
1953 Chemical frill girdling for pine release in Lower Michigan. Down to Earth 8(4): 2-4, illus.

_____
1953 Controlling scrub aspen with basal sprays. Down to Earth 9(1): 10-11, illus.

_____
* 1954 Chemical herbicides as tools in forest management. Soc. Amer. Foresters Proc. 1954: 194-198.

_____ and COULTER, L. L.
1955 Aerial applications of herbicides: A promising method for releasing conifers. Down to Earth 2(1): 18-20, illus.

AVERELL, J. L.
1930 How much does it cost to thin? Jour. Forestry 28: 573-574.

BROWN, R. M., and PETHERAM, H. D.
1926 Conversion of jack pine into red and white pine stands. Jour. Forestry 24: 265-271.

DICKERMAN, M. B.
1953 Attacking woody plant control problems through cooperative research. L. S. Misc. Rpt. 21: 58-60. (Processed.)

ENGLE, LaMONT, G.
1948 Girdling northern hardwood wolf trees. Jour. Forestry 46: 925-926.

ENGLE, LaMONT G., and SMITH, NORMAN F.
* 1952 Red pine growth ten years after thinning. Mich. Acad. Sci., Arts, and Letters Papers (1950 meeting) 36: 101-109.

_____ 1954 Some cost aspects of pruning red pine. Mich. Acad. Sci., Arts, and Letters Papers (1953 meeting) 39: 151-157.

EYRE, F. H.
1933 Possibilities of release cuttings in Minnesota forests. Jour. Forestry 31: 436-440.

_____ 1944 Good wages can be earned in thinning young jack pine for pulpwood. Wis. Conserv. Bul. 9(7): 5-6.

_____ and ZEHNGRAFF, PAUL J.
_____ 1945 Supplying Lake States needs for pine pulpwood through thinning. Canad. Pulp and Paper Assoc. Woodlands Sec., Index 803 (A-1).

_____ and _____
_____ 1947 Spacing of young red pine. L. S. Sta. Paper 8, 6 pp. (Processed.)

KITTREDGE, JOSEPH, JR.
1927 Thinning young red pine. Jour. Forestry 25: 555-559.

LAKE STATES FOREST EXPERIMENT STATION
1935 Release of young Norway pine from aspen competition. Jour. Forestry 33: 174-175.

_____ 1953 Proceedings Lake States Forestry Clinic on using chemical controls in forest management, Feb. 10 & 11, 1953. L. S. Misc. Rpt. 21, 68 pp. (Processed.)

_____ 1954 Thinning aspen woods will pay. Forest Indus. Inform. Com. of Minn., Forest Bul. 4, 4 pp., illus.

_____ * 1955 Proceedings of the Lake States aerial brush control meeting and tour, July 26-28, 1955. L. S. Misc. Rpt. 39, 38 pp., illus.

MOWAT, E. L.
1928 Review of "The growth of hemlock before and after release from suppression," by Robert Marshall. Jour. Forestry 26: 374-375.

RALSTON, R. A., and COULTER, L. L.
* 1954 Aerial spray tests with 2,4,5-T for scrub oak control in Lower Michigan. L. S. Tech. Note 424, 1 p. (Processed.) Also Down to Earth 10(4): 11. 1955.

ROE, EUGENE I.
1935 The soil as a guide to stand treatment. 9 pp. (Processed.)

_____ and STOECKELER, JOSEPH H.
* 1950 Thinning over-dense jack pine seedling stands in the Lake States. Jour. Forestry 48: 861-865, illus.

_____
1952 Understory balsam fir responds well to release. Pulp and Paper Mag. Canada 53(12): 158.

_____
1953 Foliage spraying in chemical brush control. L. S. Misc. Rpt. 21: 17-21. (Processed.)

_____
1955 Aerial brush control in Lake States forests. L. S. Misc. Rpt. 37: 9 pp. (Processed.)

_____
1955 Brush control in forest management. Abs. Aircraft and Ground Sprayers' Short Course, Univ. of Minn., June 24-25, pp. 48-51. (Processed.)

RUDOLF, PAUL O.
1945 Review of "Rubki ukhoda za lesom (Thinnings in forests)," by Central Forest Research Institute. Jour. Forestry 43: 383.

_____
1951 Chemical control of brush and tree growth for the Lake States. L. S. Misc. Rpt. 15, 30 pp. (Processed.)

_____
1953 The place of chemical controls in forest management. L. S. Misc. Rpt. 21: 8-12. (Processed.)

SALMINEN, W. A., and ENGLE, L. G.
1948 A young hardwood stand is thinned profitably. Timber Prod. Bul. (Upper Mich. and Wis.) 63: 9. June.

SCHOLZ, HAROLD F., and DeVRIEND, A. J.
1951 Improvement cuttings pay dividends in Wisconsin farm woodlots. Lake States Timber Dig. 5(10): 1. Also Wis. Conserv. Bul. 18(1): 22-23, illus.

SCHOLZ, HAROLD F.
* 1952 Thinning young oak stands for fuel. Miss. Val. Lumberman 83(29): 21. Also L. S. Tech. Note 366, 1 p. (Processed.)

SHIRLEY, HARDY L.
1936 Growing high-quality timber. Jour. Forestry 34: 436.

STOECKELER, J. H.
1942 More on thinning. Plains Forester 7(1): 8-9.

_____
1947 Too many jack pines per acre pose a real problem for Mosinee foresters. Tree Tips, p. 3. June.

_____ and ARBOGAST, CARL, JR.
* 1948 Thinning and pruning in young second-growth hardwoods in northeastern Wisconsin. Soc. Amer. Foresters Proc. (1947 meeting): 328-346.

_____
1948 Timber stand improvement is a job that confronts many Wisconsin landowners. Tree Tips, p. 2. April. Also Timber Prod. Bul. (Upper Mich. and Wis.) 65: 6, August; and Lake States Timber Dig. 3(8): 10, illus.

_____ and HEINSELMAN, M. L.
* 1950 The use of herbicides for the control of alder, brush, and other swamp shrubs in the Lake States. Jour. Forestry 48: 870-874.

YOUNG, LEIGH J., and EYRE, FRANCIS H.
1937 Release cuttings in plantations of white and Norway pine. Mich. Acad. Sci., Arts, and Letters Papers (1936 meeting) 22: 301-320.

ZASADA, Z. A.
* 1952 Does it pay to thin young aspen? Jour. Forestry 50: 747-748.

ZEHNGRAFF, PAUL, and VON BARGEN, JOHN
1949 Chemical brush control in forest management. Jour. Forestry 47: 110-112.

NOTE: Additional material can be found in other categories such as Utilization and Marketing (Zasada and Richardson--Logging and pulping black spruce thinnings); and most of the items in Management of Timber Types.

ARBOGAST, CARL F.
1949 A field mapping device. Jour. Forestry 47: 475-477.

_____ 1952 Fifth annual timber harvest field day. Timber Prod. Bul. (Upper Mich. and Wis.) 106: 6. Jan.

AVERELL, JAMES L.
1928 Review of "The seed production of forest trees, year 1926," by G. Mellstrom. Jour. Forestry 26: 237-238.

DUERR, WILLIAM A., and STODDARD, CHARLES H., JR.
1938 Results of a commercial selective cutting in northern hemlock-hardwoods. Jour. Forestry 36: 1224-1230.

EYRE, F. H.
1933 When a tornado strikes a forest. Minn. Conserv., pp. 4-5. July.

_____ and BLYTHE, R. H.
1934 Mortality in selectively cut northern hardwoods. 8 pp. (Processed.)

_____ 1936 Dispersal of jack pine seed from seed trees and slash. Mich. Acad. Sci., Arts, and Letters Papers (1935 meeting) 21: 279-284.

_____ and NEETZEL, J. R.
1937 Applicability of the selection method in northern hardwoods. Jour. Forestry 35: 353-358.

_____ 1938 Can jack pine be regenerated without fire? Jour. Forestry 36: 1067-1072, illus.

_____ 1939 Silvicultural management of northern hardwoods. Jour. Forestry 37: 719-721.

_____ and ZILLGITT, W. M.
* 1950 Size-class distribution in old-growth northern hardwoods twenty years after cutting. L. S. Sta. Paper 21, 15 pp., illus. (Processed.)

_____ and LONGWOOD, F. R.
* 1951 Reducing mortality in old-growth northern hardwoods through partial cutting. L. S. Sta. Paper 24, 13 pp. (Processed.)

FARRINGTON, ROBERT A.
1942 Natural rotation for Lake States oak. Wis. Conserv. Bul. 7(7): 4.

GEVORKIANTZ, S. R., and RUDOLF, PAUL O.
1933 Translation from the Russian of "Ob organizatsii ezhegodhykh sistematicheskikh nablyudenii nad plodonosheniem drevesnykh porod (The organization of annual systematic observations on seed production of forest tree species)," by V. G. Kapper. U. S. Forest Serv. Translation 98, 27 pp. (Processed. On file at U. S. Forest Serv.)

KITTREDGE, JOSEPH JR., and BELYEA, HAROLD C.
1923 Reproduction with fire protection in the Adirondacks. Jour. Forestry 21: 784-787.

LAKE STATES FOREST EXPERIMENT STATION
1939 Some notes on jack pine. Forestry Chron. 15(3): 172-174. (Comprises L. S. Tech. Notes 148-151.)

_____
1940 Field studies in selective logging: Upper Peninsula Experimental Forest, Dukes, Michigan. 5 pp., illus. (Processed.)

LeBARRON, RUSSELL K., and EYRE, FRANCIS H.
1938 The influence of soil treatment on jack pine reproduction. Mich. Acad. Sci., Arts, and Letters Papers (1937 meeting) 23: 307-310.

_____
1939 Fire babies. Mpls. Athletic Club Gopher. Nov., illus.

_____
* 1943 Partial cutting in black spruce in the Lake States. Mich. Acad. of Sci., Arts, and Letters (1942 meeting) 28: 249-260.

_____
* 1944 Influence of controllable environmental conditions on regeneration of jack pine and black spruce. Jour. Agr. Res. 68: 97-119.

_____
* 1945 Light cutting in black spruce is practicable. Jour. Forestry 43: 486-489, illus.

LONGWOOD, F. R.
* 1952 Heavy mortality does not always follow partial cutting of hemlock hardwood stands. Jour. Forestry 50: 558-559.

MOWAT, E. L.
1930 Breakage no obstacle to selective logging. Jour. Forestry 28: 99-100.

NEFF, L. P.
1952 A comprehensive cutting study in swamp black spruce. Pulp and Paper Mag. Canada 53(6): 167, 170, 172, illus.

RALSTON, R. A.
* 1950 Red pine seedling survival under different levels of stocking. Pulp and Paper Mag. Canada 51(12): 186. Also L. S. Tech. Note 334, 1 p. (Processed.)

ROE, EUGENE I.
1945 Viable seed produced by 12-year-old red pine. Jour. Forestry 43: 678-679.

_____
* 1949 Sphagnum moss retards black spruce regeneration. Jour. Forestry 47: 960. Also L. S. Tech. Note 321, 1 p. (Processed.)

RUDOLF, PAUL O.
1935 Translation of the German "Regeneration biology of aspen on the basis of data collected in Esthonia and Finland," by Paul Reim. U. S. Forest Serv. Translation 220. (Processed. On file at U. S. Forest Serv.)

SHIRLEY, HARDY L.
1931 Does light burning stimulate aspen suckers? Part I, Jour. Forestry 29: 524-525; and Part II, Jour. Forestry 30: 419-420. 1932.

_____
1933 Improving seed-bed conditions in a Norway pine forest. Jour. Forestry 31: 322-328, illus.

_____
1936 Review of "Holzfehler (Timber defects)," by Hermann Knuchel. Jour. Forestry 34: 443-444.

STOECKELER, J. H., and ARBOGAST, C. F.
1948 Second annual timber harvest field day staged by forest research center and extension service near Hiles, Wisconsin. Timber Prod. Bul. (Upper Mich. and Wis.) 68: 6-7. Nov. Also Lake States Timber Dig. 3(4): 4.

STOECKELER, J. H.
1951 Review of "A research on the regeneration of birch in South Finland," by Risto Sarvas. Jour. Forestry 49: 458-459.

_____ and ARBOGAST, CARL, JR.
* 1955 Forest management lessons from a 1949 windstorm in northern Wisconsin and Upper Michigan. L. S. Sta. Paper 34, 11 pp. (Processed.)

WACKERMAN, A. E.
1926 Selective logging in the Upper Peninsula. Devlpmt. Bur. News. Dec.

_____
1926 Selective logging--what it means to the mining industry. Lake Superior Mining Inst. Ann. Meeting 25: 188-196.

YOUNG, LEIGH J., and SCHOLZ, HAROLD F.
1949 Some results of selection cutting in the Eber White woods, Ann Arbor, Michigan. Mich. Acad. Sci., Arts, and Letters Papers (1947 meeting) 33: 39-56.

ZASADA, ZIGMOND A.
* 1952 Reproduction on cutover swamplands in the Upper Peninsula of Michigan. L. S. Sta. Paper 27, 15 pp. (Processed.)

_____
1954 Composition and quality objectives for the aspen type in the Lake States. Soc. Amer. Foresters Meeting Proc. 1954: 79-82.

ZEHNGRAFF, PAUL J.
1943 Jack pine regeneration following clear cutting on the Chippewa National Forest. Jour. Forestry 41: 122-125.

_____
1949 A method of regulating cut in individual stands. 6 pp. (Processed.)

ZILLGITT, W. M.
1944 Growth response in sugar maple following light selective cutting. Jour. Forestry 42: 680.

ZILLGITT, W. M., and EYRE, F. H.
* 1945 Perpetuation of yellow birch in Lake States forests. Jour. Forestry 43: 658-661.

_____
* 1948 Stocking in northern hardwoods under the selection system. Soc. Amer. Foresters Meeting Proc. 1947: 320-327.

_____
* 1950 Quality of reproduction following partial cutting of northern hardwoods. Jour. Forestry 48: 324-325.

_____
* 1951 Converting mature northern hardwood stands to sustained yield. Jour. Forestry 49: 494-497.

ZON, RAPHAEL
1927 Timber cutting by selective logging replacing old way. U. S. Dept. Agr. Yearbook 1927: 615-617.

_____ and MOWAT, E. L.
1929 New forests for old in Wisconsin. Wis. Agr., April 20.

_____ and GARVER, R. D.
1930 Selective logging in the northern hardwoods of the Lake States. U. S. Dept. Agr. Tech. Bul. 164, 46 pp., illus.

_____
1936 Review of "The theory and practice of silviculture," by F. S. Baker. Sci. 83(2140): 16-17.

NOTE: Additional material can be found in other categories such as Management of Timber Types (most of the items); Fire (LeBarron--Role of forest fires in reproduction of black spruce); and Wildlife (Roe--Effect of red squirrels on red pine seed production in off years).

Management of Timber Types--Comprehensive Summaries

ARBOGAST, CARL, JR.
* 1953 Managing northern hardwoods in the Lake States. L. S. Misc. Rpt. 23, 11 pp. (Processed.)

EYRE, FRANCIS H., and NEETZEL, JOHN R.
1939 Practical cutting methods for northern hardwoods. Mich. Acad. Sci., Arts, and Letters Papers (1938 meeting) 24: 197-208.

_____ and LeBARRON, RUSSELL K.
* 1944 Management of jack pine stands in the Lake States. U. S. Dept. Agr. Tech. Bul. 863, 66 pp., illus.

_____ and ZEHNGRAFF, PAUL
* 1948 Red pine management in Minnesota. U. S. Dept. Agr. Cir. 778, 70 pp., illus.

_____ and ZILLGITT, W. M.
* 1953 Partial cuttings in northern hardwoods of the Lake States (Twenty-year experimental results). U. S. Dept. Agr. Tech. Bul. 1076, 124 pp., illus.

KITTREDGE, JOSEPH, JR.
1927 Management of the maple-basswood type in northern Minnesota. Jour. Forestry 25: 1040-1043.

LeBARRON, RUSSELL K.
* 1948 Silvicultural management of black spruce in Minnesota. U. S. Dept. Agr. Cir. 791, 60 pp., illus.

LONGWOOD, F. R.
* 1953 Some aspects of managing second-growth woodlands in Upper Michigan. L. S. Sta. Paper 29, 17 pp., illus. (Processed.)

NEETZEL, JOHN R.
* 1949 Farmwoods management in southern Minnesota. L. S. Misc. Rpt. 6, 28 pp. (Processed.)

ROE, EUGENE I.
* 1950 Balsam fir in Minnesota: A summary of present knowledge. L. S. Misc. Rpt. 13, 25 pp. (Processed.)

RUDOLF, PAUL O.
* 1949 Handling northern white-cedar stands for wood and wildlife in the Lake States. L. S. Misc. Rpt. 3, 6 pp. (Processed.)

SCHOLZ, HAROLD F.
1951 Multiple-use potentialities of the farm woodlot. Ames Forester (Iowa State Col.) 38: 45-52, illus.

ZASADA, Z. A.
* 1950 Aspen management problems of the Lake States. L. S. Misc. Rpt. 10, 23 pp. (Processed.)

ZEHNGRAFF, PAUL
* 1947 Possibilities of managing aspen. L. S. Aspen Rpt. 21, 23 pp. (Processed.)

_____
1949 Aspen as a forest crop in the Lake States. Jour. Forestry 47: 555-565, illus.

ZON, RAPHAEL
1928 Timber growing and logging practice in the Lake States. U. S. Dept. Agr. Bul. 1496, 64 pp., illus.

Forest Genetics

AVERELL, JAMES L.
1927 The Swedish "Better Sires" campaign of 1904. Jour. Forestry 25: 742-744.

BATES, CARLOS G.
1928 Tree "Seed Farms." Jour. Forestry 26: 969-976.

_____
* 1930 The frost hardiness of geographic strains of Norway pine. Jour. Forestry 28: 327-333.

_____
1930 Review of "Racer af douglasie og sitkagran (Races of Douglas-fir and Sitka spruce)," by A. Oppermann. Jour. Forestry 28: 219-220.

_____
1930 Review of "The varieties and geographical forms of Pinus pinaster Soland in Europe and South Africa," by C. E. Duff. Jour. Forestry 28: 220-221.

DICKERMAN, M. B.
* 1955 Recent progress in forest genetics work at the Lake States Forest Experiment Station. L. S. Misc. Rpt. 40: 1-3. (Processed.)

GEVORKIANTZ, S. R.
* 1955 Notes on statistical methodology in forest tree improvement work. L. S. Misc. Rpt. 40: 74-80. (Processed.)

KITTREDGE, JOSEPH, JR.
1924 Review of "Tree ancestors," by Edward Wilber Berry. Jour. Forestry 22: 210-213.

LAKE STATES FOREST GENETICS CONFERENCE, 1953
* 1953 Lake States Forest Genetics Conference, March 31-April 1, 1953. L. S. Misc. Rpt. 22, 83 pp. (Processed.)

MacALONEY, H. J.
* 1953 Forest genetics problems in growing insect-resistant trees. L. S. Misc. Rpt. 22: 62-63.

McCULLEY, ROBERT D.
* 1953 The Committee on Southern Forest Tree Improvement. L. S. Misc. Rpt. 22: 48-49.

MEULI, L. J.
1936 Drought resistance of green ash as affected by geographic origin. Minn. Acad. Sci. Proc. 4: 38-42.

_____ and SHIRLEY, H. L.
1937 The effect of seed origin on drought resistance of green ash in the Prairie-Plains states. Jour. Forestry 35: 1060-1062, illus.

NIENSTAEDT, HANS, and KRIEBEL, HOWARD B.
* 1955 Controlled pollination of eastern hemlock. Forest Sci. 1: 115-120, illus.

_____
* 1955 Problems of seed and pollen collection, shipment, and storage. L. S. Misc. Rpt. 40: 51-53. (Processed.)

RUDOLF, PAUL O.
1932 A weevil-resistant strain of jack oak. Jour. Forestry 30: 749-750.

_____
1936 Pedigreed trees. Minn. Conserv. 37: 4-5. June.

_____
1940 Review of "Fichtenformen und fichtenrassen in Glatzer Schneegebirge (Forms and races of Norway spruce in the Glatz Schneegebirge)," by R. Hassenberger. Jour. Forestry 38: 979-980.

RUDOLF, PAUL O.
* 1947 Importance of red pine seed source. Soc. Amer. Foresters Proc. 1947: 384-398.

_____ * 1948 How about our seed supply? Jour. Forestry 46: 741-743.

_____ * 1948 Hybrid poplar planting in the Lake States. L. S. Sta. Paper 14, 17 pp. (Processed.)

_____ 1950 Variation in Scotch pine. Mich. Acad. Sci., Arts, and Letters Papers (1948 meeting) 34: 57-68.

_____ 1951 Nursery behavior of red pine stock of different seed origins. U. S. Forest Serv. Tree Planters' Notes 8: 3-4.

_____ * 1951 Scotch pine seed sources for northeastern Minnesota. Minn. Acad. Sci. Proc. (1948 meeting) 16: 25-26.

_____ * 1951 Winter damage and seed source of planted pines in northern Minnesota. Minn. Acad. Sci. (1949 meeting) 17: 74-79.

_____ * 1953 The Forest Genetics Steering Committee of the Inland Northwest Region. L. S. Misc. Rpt. 22: 49-50.

_____ * 1953 Forest genetics work at the Lake States Forest Experiment Station. L. S. Misc. Rpt. 22: 1-10.

_____ 1953 The Lake States Forest Tree Improvement Committee. First N.E. Forest Tree Improvement Conf. Proc.: 97-98. (Processed.)

_____ * 1954 Forest tree improvement work in the Lake States. Jour. Forestry 52: 688-689.

_____ * 1955 Tree races and forest tree improvement. L. S. Misc. Rpt. 35: 8 pp. (Processed.) Also Third So. Conf. on Forest Tree Improvement Proc. 1955: 4-10.

SECOND LAKE STATES TREE IMPROVEMENT CONFERENCE
* 1955 Second Lake States Forest Tree Improvement Conf. Proc., L. S. Misc. Rpt. 40, 108 pp., illus. (Processed.)

SHIRLEY, HARDY L.
1937 Forest eugenics in Germany. Amer.-Germ. Rev., pp. 9-12. March.

_____ 1937 The relation of drought and cold resistance to source of seed stock. Minn. Hort. Feb.

_____ 1937 Review of "The employment of species, types, and individuals in forestry," by C. Syrach Larsen. Jour. Forestry 35: 1169-1171.

STOECKELER, J. H.
1948 Tree breeding material shipped to Sweden for propagation study. Tree Tips, p. 3. Jan.

_____ 1950 Bigger and better forest trees for Sweden. Sci. Monthly 70: 328-332, illus.

_____ 1950 Review of "Preliminary report on results of Italian researches on the races of Scotch pine," by Ernesto Allegri and Ricardo Morandini. Jour. Forestry 48: 507.

_____ * 1953 Importance of seed source and the need for tree seed farms. L. S. Misc. Rpt. 22: 74-79.

ZON, RAPHAEL
1930 The search for forest facts. Amer. Forests and Forest Life 36: 421-423, 482, illus.

Shelterbelts

AIKMAN, J. M.
1935 Native vegetation of the region. Sect. 13 of "Possibilities of shelterbelt planting in the Plains Region," U. S. Forest Serv., pp. 155-174, illus.

_____ 1935 The shelterbelt project. Minn. Acad. Sci. Papers 13: 18-24.

BATES, C. G.
1934 The Plains Shelterbelt Project. Jour. Forestry 32: 978-991.

_____ 1935 Climatic characteristics of the Plains Region. Sect. 11 of "Possibilities of shelterbelt planting in the Plains Region," U. S. Forest Serv., pp. 83-110, illus.

_____ and STOECKELER, J. H.
* 1941 Snowdrift control on highways by planting of trees and shrubs. 14 pp., illus. (Processed.) Also Engin. News-Rec. 129(23): 70-74, illus. under title "Planting to control drifts on highways."

_____ 1944 The windbreak as a farm asset. U. S. Dept. Agr. Farmers' Bul. 1405 (rev.) 22 pp., illus.

_____ * 1945 Shelterbelt influences. I. General description of studies made. Jour. Forestry 43: 88-92.

_____ * 1945 Shelterbelt influences. II. The value of shelterbelts in house-heating. Jour. Forestry 43: 176-196, illus.

_____ * 1948 Farm crops benefit from field shelterbelts. Minn. Farm and Home Sci. 5(3): 6-7.

_____ * 1948 How shelterbelts benefit crops. Jour. Forestry 46: 767-768. Also L. S. Tech. Note 299, 1 p. (Processed.)

GEVORKIANTZ, S. R., and SCHOLZ, H. F.
1934 Review of "How to propagate forests in our steppes and how to take care of them," by G. M. Vysotsky (Ukraine). Jour. Forestry 32: 358-362.

HAYES, F. A., and STOECKELER, J. H.
1935 Soil and forest relationships of the shelterbelt zone. Sect. 12 of "Possibilities of shelterbelt planting in the Plains Region," U. S. Forest Serv., pp. 111-153, illus.

LAKE STATES FOREST EXPERIMENT STATION
1934 The Plains Shelterbelt Project. Minn. Conserv. Nov.

_____
1935 A survey of past plantings. Sect. 7 of "Possibilities of shelterbelt planting in the Plains Region," U. S. Forest Serv., pp. 39-47, illus.

MUNNS, E. N., and STOECKELER, JOSEPH H.
1946 How are the Great Plains shelterbelts? Jour. Forestry 44: 237-257, illus.

OLSON, D. S., and STOECKELER, J. H.
1935 The proposed tree plantations--their establishment and management. Sect. 4 of "Possibilities of shelterbelt planting in the Plains Region," U. S. Forest Serv., pp. 15-27, illus.

RUDOLF, PAUL O., and GEVORKIANTZ, S. R.
1935 Shelterbelt experience in other lands. Sect. 9 of "Possibilities of shelterbelt planting in the Plains Region," U. S. Forest Serv., pp. 59-76, illus.

SCHOLZ, HAROLD F.
* 1935 Causes of decadence in the old groves of North Dakota. U. S. Dept. Agr. Cir. 344, 38 pp., illus.

STOECKELER, J. H.
1937 Relation of size of deciduous nursery stock to field survival in the Great Plains. Jour. Forestry 35: 773-777, illus.

_____
1937 Subsoiling increases survival and growth of tree planting in the Great Plains. 9 pp. (Processed.)

STOECKELER, J. H.
1938 Shelterbelt planting reduces wind erosion damage in western Oklahoma. Jour. Amer. Soc. Agron. 30: 923-931.

1939 Experiment Station talks about conifer establishment. Plains Forester 4(9): 5-9. (Processed.)

and BATES, C. G.
1939 Shelterbelts: The advantages of porous soils for trees. Jour. Forestry 37: 205-221, illus.

1940 Alkali tolerance of shelterbelt species. Plains Forester 5: 5-6. Nov.

and DORTIGNAC, E. J.
1941 Snowdrifts as a factor in growth and longevity of shelterbelts in the Great Plains. Ecology 22: 117-124, illus.

1945 Narrow shelterbelts for the southern Great Plains. Soil Conserv. 11(1): 16-20.

1946 The Great Plains Shelterbelt. Amer. Nurseryman 84(5): 7-10.

and WILLIAMS, ROSS A.
* 1949 Windbreaks and shelterbelts. U. S. Dept. Agr. Yearbook "Trees" 1949: 191-199.

1950 Shelterbelts in Italy. Foreign Agr. 14(9): 196-198.

1950 Windbreak and shelterbelt planting in the United States. Third World Forestry Cong. Proc. 1949: 253-264, illus.

ZON, RAPHAEL
1935 Shelterbelts--futile dream or workable plan? Sci. 81 (2104): 391-394.

1935 What the study discloses. Sect. 2 of "Possibilities of shelterbelt planting in the Plains Region." U. S. Forest Serv., pp. 3-10, illus.

ZON, RAPHAEL
1935 Prospective effects of the tree-planting program. Sect. 6 of "Possibilities of shelterbelt planting in the Plains Region," U. S. Forest Serv., pp. 33-38, illus.

NOTE: Additional material can be found in other categories such as General Forestry (Demmon--Forestry in North Dakota); and Artificial Regeneration (Ware--Planting and care of trees in South Dakota).

Soils and Water

AHLGREN, H. L.; WALL, M. L.; MUCKENHIRN, R. J.; and SUND, J. M.
1946 Yields of forage from woodland pastures on sloping land in southern Wisconsin. Jour. Forestry 44: 709-711.

_____; _____; _____; and _____
1946 Yields of renovated and unimproved permanent pastures on sloping land in southern Wisconsin. Jour. Amer. Soc. Agron. 38: 914-922.

ALWAY, F. J., and ZON, RAPHAEL
1930 Quantity and nutrient contents of pine leaf litter. Jour. Forestry 28: 715-727.

_____; KITTREDGE, JOSEPH, JR.; and METHLEY, W. J.
1933 Composition of the forest floor layers under different forest types on the same soil type. Soil Sci. 36: 387-398.

AREND, JOHN L.
1953 Review of "Soils and Land of Michigan," by J. O. Veatch. Jour. Forestry 51: 829.

AVERELL, JAMES L.
1928 Review of "Studier över skogsproduktion a nagra avdikade torvmarker inom Västerbottenskustland (A study of forest production on some drained peat soils in the Västerbotten Coastland)," by Paul Börjeson. Jour. Forestry 26: 934-936.

_____ and McGREW, PAUL C.
1929 The reaction of swamp forests to drainage in northern Minnesota. Minn. Dept. Drainage and Waters, 66 pp., illus.

BATES, C. G., and ZEASMAN, O. R.
1930 Soil erosion--a local and national problem. Wis. Agr. Expt. Sta. Res. Bul. 99, 100 pp., illus.

1931 Chaining the Father of Waters. Amer. Forests 36(2): 67-70, 106, 127.

1931 Erosion and the Middle West's "Bald Farms." Commerce 28(3): 30-31, 56, 58, illus.

1931 Erosion gnaws at the world's bread basket. Commerce 28(2): 75-76.

1932 Farms, floods, and river navigation in the Mississippi Valley. Commerce. Sept. and Oct.

* 1932 Forests and streamflow (A discussion of a paper by W. G. Hoyt and H. C. Troxell). Amer. Soc. of Civil Engin. Proc. 1932.

1933 Soil erosion in the Mississippi Valley. Jour. Forestry 31: 88-96.

* 1936 The forest influence on streamflow under divergent conditions. Jour. Forestry 34: 961-969.

1936 With flood and dust--erosion's $100,000,000 penalty. Commerce 33(3): 13-14, 50-52.

1937 Controlling mad waters. Amer. Forests 43(6): 278-281, 300, 321-322.

1937 Review of "Headwaters control and use;" Papers presented at Upstream Engin. Conf., Sept. 1936. Jour. Forestry 35: 879-881.

* 1938 Reforestation and flood control. Jour. Forestry 36: 1073-1079.

BATES, C. G.
1939 Symposium on "Forest influence" studies and methodology. Chron. Bot. 5(2/3): 184-188.

1940 Review of "Soil conservation" by Hugh Hammond Bennett. Jour. Forestry 38: 603-604.

GYSEL, LESLIE W., and AREND, JOHN L.
* 1953 Oak sites in southern Michigan: Their classification and evaluation. Mich. State Col. Tech. Bul. 236, 57 pp., illus.

KITTREDGE, J., JR.
1928 The use of soil surveys in forestry. First Internatl. Cong. Soil Sci. Proc. and Papers 4: 562-565.

1929 The importance of time and rate of change in forest soil investigations. Internatl. Cong. of Forestry Expt. Stas. Proc.: 479-484.

LAKE STATES FOREST EXPERIMENT STATION
1934 Water and mineral resources as related to land use. Chap. 9 in "Land utilization in Minnesota," by Governor's Com. on Land Utilization, pp. 149-162, Minneapolis.

LeBARRON, RUSSELL K., and NEETZEL, JOHN R.
1942 Drainage of forested swamps. Ecology 23: 457-465, illus.

1945 Adjustment of black spruce root systems to increasing depth of peat. Ecology 26: 309-311.

1945 Review of "The peats of New Jersey and their utilization." Part A. Nature and origin of peat; composition and utilization, by Selman A. Waksman. Part B. The peat resources of New Jersey, by Selman A. Waksman, H. Schulhoff, and others. Jour. Forestry 43: 150-151.

LIVINGSTON, L. F., and WACKERMAN, A. E.
1927 Swamp drainage for forestry. Agr. Engin. 8(4): 79-80.

MITCHELL, J. A.
1926 Forest and climate. South. Lumber Jour. 24: 91.

MITCHELL, J. A.
1930 Interception of rainfall by the forest. Jour. Forestry 28: 101-102.

MUCKENHIRN, R. J.; AHLGREN, H. L.; and FARRINGTON, R. A.
1941 Grass, friend of the farmer and the soil. Wis. Conserv. Bul. 6(11): 23-25, illus.

ROE, E. I.
1931 Some possibilities of the use of plant indicators in the Lake States. Cornell Countryman 28(6): 136-137.

_____
1935 Forest soils: The basis of forest management. 9 pp. (Processed.)

RUDOLF, PAUL O.
1939 Review of "The plant and its water supply," by E. J. Salisbury. Jour. Forestry 37: 499-500.

SCHOLZ, HAROLD F.
1931 Mapping of forest soils. Ames Forester (Iowa State Col.), Vol. 29.

_____
1931 Physical properties of the cove soils on the Black Rock Forest. Black Rock Forest Bul. 2, 59 pp., illus.

_____
1937 The effect of soil texture upon the growth of red and chestnut oaks. Black Rock Forest Papers 1(11): 76-79.

_____ and STOECKELER, J. H.
1940 A lysimeter installation for studying forest influence problems. Jour. Forestry 38: 256-260, illus.

_____
1951 The case against cows: 73 percent of Wisconsin farm woodlands subject to destructive pasturing. Tree Tips, pp. 3-4, illus. Also Wis. Conserv. Bul. 16(12): 3-5, illus.

STOECKELER, J. H.
* 1937 A new jack for pulling soil-sampling tubes. Soil Sci. 43: 379-383.

STOECKELER, J. H.
1938 Soil adaptability of white spruce. Jour. Forestry 36: 1145-1147.

_____ 1942 Review of "Forest soils: Origin, properties, relation to vegetation, and silvicultural management," by S. A. Wilde. Jour. Forestry 40: 351-352.

_____ 1947 Review of "The destruction of the soil in Palestine," by F. H. Taylor. Jour. Forestry 45: 378-379.

_____ 1947 Review of "Forest soils," by Harold J. Lutz and Robert F. Chandler. Jour. Forestry 45: 606-608.

_____ 1947 Review of "Forest soils and forest growth," by S. A. Wilde. Bot. Gaz. 108: 458.

_____ 1948 The growth of quaking aspen as affected by soil properties and fire. Jour. Forestry 46: 727-737, illus.

_____ 1949 Review of "Forest influences," by Joseph Kittredge. Ecology 30: 263-264.

THAMES, JOHN L.; STOECKELER, JOSEPH H.; and TOBIASKI, ROBERT
* 1955 Soil moisture regime in some forest and nonforest sites in northern Wisconsin. Soil Sci. Soc. Amer. Proc. 19(3): 381-384, illus.

WACKERMAN, A. E.
1926 Earthworms in the forest. Jour. Forestry 24: 454-455.

_____ 1927 Marginal ditch and swamp drainage for forestry. Jour. Forestry 25: 848-851, illus.

WILDE, S. A., and SCHOLZ, H. F.
1934 Subdivision of the Upper Peninsula Experimental Forest on the basis of soils and vegetation. Soil Sci. 38: 383-398.

YOUNGBERG, C. T., and SCHOLZ, H. F.
1950 Relation of soil fertility and rate of growth of mixed oak stands in the Driftless Area of southwestern Wisconsin. Soil Sci. Soc. Amer. Proc. (1949 meeting) 14: 331-332, illus.

ZON, RAPHAEL
1912 Forests and water in the light of scientific investigation. U. S. Natl. Waterways Comn. Final Rpt., App. 5, pp. 205-302. (62nd U. S. Cong., 2d sess., S. Doc. 469.) (Reprinted with revised bibliography, 1927).

1923 How forests feed the clouds. In "Science remaking the world," by O. W. Caldwell and E. E. Slosson. pp. 202-222, illus. New York.

1926 Effect of drainage of swamps upon forest growth. Reclam. and Farm Engin. 9(2): 33-37, 42, illus.

1926 Effect of drainage on forest lands. Gopher Countryman (Univ. of Minn.) 3(6): 13-14.

1926 Swamp drainage. Paper Trade Jour. Nov. 4.

1927 Do forests prevent floods? Amer. Forests and Forest Life 33: 387-392, 432, illus.

1927 Reforestation--a practical method of flood control. In "Floods, forests and the future," Amer. Tree Assoc., Wash. D. C.

1927 Taming the Father of Waters. Jour. Forestry 25: 507-509.

and AVERELL, JAMES L.
1928 The effect of drainage on forest growth. Agr. Engin. 9(6): 171-173. Also Pulp and Paper Mag. Canada 27(3). Jan. 17.

1928 Improving timber growth in northern swamps. U. S. Forest Serv., Forest Worker 4(1): 11.

ZON, RAPHAEL

1928 Review of "Forest and stream-flow experiment at Wagon Wheel Gap, Colorado," by C. G. Bates and A. J. Henry. Jour. Forestry 26: 1030-1034.

_____ 1928 Silviculture as a factor in maintaining the fertility of forest soils. First Internatl. Cong. Soil Sci. Proc. and Papers 4: 575-582. Also Soil Sci. Jan.

_____ 1928 Statement of Dr. Raphael Zon of St. Paul, Minn., Director of the Lake States Forest Experiment Station. 70th U. S. Cong., 1st sess., House Com. on Flood Control, Flood Control Hearings, pt. 5, pp. 3190-3272, illus.

_____ and AVERELL, JAMES L.
1929 Drainage of swamps and forest growth. Wis. Agr. Expt. Sta. Res. Bul. 89, 22 pp., illus.

_____ 1929 Forests as a factor in flood control within the Upper Mississippi River Basin. 70th U. S. Cong., 2d sess., House Doc. 573, Relation of Forestry to the Control of Floods in the Mississippi Valley, pp. 85-113, illus.

_____ 1929 The role of forests in the circulation of water on the earth's surface. Internatl. Cong. of Plant Sci. Proc. 1: 741-749.

_____ and AVERELL, J. L.
1930 Growth in swamps before and after drainage. Jour. Forestry 28: 100-101.

_____ 1932 Control of erosion by means of reforestation. Nat. Drainage, Conserv., and Flood Control Cong. Proc., Louisville, Ky.

_____ 1935 The forest--a plant society. Minn. Conserv. Aug.

_____ * 1941 Climate and the nation's forests. U. S. Dept. Agr. Yearbook "Climate and Man" 1941: 477-498, illus.

NOTE: Additional material can be found in other categories such as Silvics, Botany, Ecology, and Physiology (Heinselman and Zasada--A review of literature relating to quaking aspen sites).

Fire

CROSBY, JOHN S.

* 1949 Forest fire burning conditions in the Lake States. L. S. Sta. Paper 16, 17 pp., illus. (Processed.)

_____ 1949 Vertical wind currents and fire behavior. U. S. Forest Serv. Fire Control Notes 10(2): 12-15.

LeBARRON, R. K.

1940 The role of forest fires in the reproduction of black spruce. Minn. Acad. Sci. Proc. (1939 meeting) 7: 10-14.

MITCHELL, J. A.

1925 That "harmless" forest fire. Review of "The role of fire in the California pine forests," by S. B. Show and E. I. Kotok. Amer. Lumberman 2601: 76. March 21.

_____ 1925 Soil building and soil destruction. Parks and Recreation. May-June.

_____ 1926 Fire weather forecasting. Devlpmt. Bur. News.

_____ 1926 Precipitation and forest fires in northern Minnesota. Jour. Forestry 24: 507-510, illus.

_____ 1927 Forest fires in Minnesota. Smoke Screen. April.

_____ 1928 Forest fires in Minnesota. Minn. Forest Serv. Bul., 74 pp., illus.

_____ 1929 Forest fire hazard as affected by weather conditions, forest type, and density of cover. Wis. Agr. Expt. Sta. Res. Bul. 91, 26 pp., illus.

_____ and SAYRE, H. R.

1929 Forest fires in Michigan. Mich. Dept. Conserv. Bul., 65 pp., illus.

MITCHELL, J. A., and STEWART, G. I.
1932 The Michigan forest fire experiment station: What it is and what it is doing. Mich. Dept. Conserv. Bul., 45 pp., illus.

_____ 1934 Cover type as a factor in fire control. Jour. Forestry 32: 96-97.

_____ 1935 More about calcium chloride as a fire retardant. Jour. Forestry 33: 84-86.

_____ and RICHMAN, H. W.
* 1936 Probability of rainfall during the fire season in the Lake States region. Unpaged, 21 charts. (Processed.)

_____ 1938 The rating of forest-fire danger. Mich. Acad. Sci., Arts, and Letters Papers (1937 meeting) 23: 325-332.

_____ 1939 Accomplishments in fire protection in the Lake States. Jour. Forestry 37: 748-750.

_____ 1942 A fire-dispatching guide for use in the Lake States. U. S. Forest Serv. Fire Control Notes 6(1): 16-18, illus.

_____ 1947 Fire loss in Lake States area. Lake States Timber Digest 2(2): 10.

_____ * 1947 Forest fires in Indiana. Jour. Forestry 45: 570-574, illus.

_____ 1947 Forest fire statistics: Their purpose and use. U. S. Forest Serv. Fire Control Notes 8(4): 14-17.

_____ 1948 Fire damage appraisal. U. S. Forest Serv. Fire Control Notes 9(2 and 3): 27-30.

_____ and ROBSON, D.
* 1950 Forest fires and forest fire control in Michigan. Mich. Dept. Conserv., 82 pp., illus.

MITCHELL, J. A., and LeMAY, NEIL
* 1952 Forest fires and forest-fire control in Wisconsin (A historical record of forest protection activities in Wisconsin). Wis. Conserv. Dept., 75 pp., illus.

_____
* 1952 The Lake States burning index meter. U. S. Forest Serv. Fire Control Notes 13(3): 7-11, illus.

_____
* 1953 Burning index ratings in fire control planning. L. S. Sta. Paper 28, 13 pp., illus. (Processed.)

_____
* 1954 Forest-fire control in the Lake States. Soc. Amer. Foresters Proc. 1954: 163-166, illus. Also L. S. Misc. Rpt. 32, 11 pp., illus. (Processed.)

_____
* 1954 Lake States forest fire damage tables for young second-growth stands. L. S. Misc. Rpt. 27, 6 pp. (Processed.)

_____
* 1954 Rating the effectiveness of forest fire protection. Jour. Forestry 52: 183-185, illus.

_____
* 1954 Some thoughts on forest fire damage appraisal. L. S. Misc. Rpt. 29, 4 pp. (Processed.)

SCHOLZ, H. F.
1930 How long does hardwood slash remain a fire menace? Jour. Forestry 28: 568.

ZON, RAPHAEL, and CUNNINGHAM, R. N.
1931 Logging slash and forest protection. Wis. Agr. Expt. Sta. Res. Bul. 109, 36 pp., illus.

NOTE: Additional material can be found in other categories such as Soils and Water (Stoeckeler--The growth of quaking aspen as affected by soil properties and fire).

Forest Insects[3/]

ANDERSON, ROGER F.
1944 The relation between host condition and attacks by the bronze birch borer. Jour. Econ. Ent. 37: 588-596, illus.

1947 The Saratoga spittlebug. Jour. Econ. Ent. 40: 695-701, illus.

BATZER, HAROLD O., and BENJAMIN, DANIEL M.
* 1954 Cold temperature tolerance of the European pine shoot moth in Lower Michigan. Jour. Econ. Ent. 47: 801-803.

1955 Effects of defoliation by the forest tent caterpillar. Ent. Soc. Amer., No. Cent. Branch, Proc. 10: 27-28, illus. (Processed.)

BEAN, JAMES L., and GODWIN, PAUL A.
1955 Description and bionomics of a new red pine scale, Matsucoccus resinosae. Forest Sci. 1: 164-176, illus.

1955 Recent developments in aerial survey techniques. Ent. Soc. Amer., No. Cent. Branch, Proc. 10: 31-32. (Processed.)

BECKWITH, L. C.
1953 Collection of European elm bark beetles in Wisconsin. Jour. Econ. Ent. 46: 913.

1953 Notes on the rearing of larch sawfly larvae. No. Cent. States Branch, Amer. Ent. Soc. Proc. 1953: 21-22. (Processed.)

and UNDERWOOD, N. B.
1953 Swaine jack-pine sawfly in Wisconsin. Jour. Econ. Ent. 46: 703.

and MacALONEY, H. J.
1954 The forest insect situation in the Lake States in 1953. L. S. Misc. Rpt. 28, 7 pp., illus. (Processed.)

3/ Includes papers important to the Lake States region that were published by the Division of Forest Insect Investigations while it was still a part of the Bureau of Entomology and Plant Quarantine. The Division was transferred to the Lake States from Milwaukee in 1954.

BECKWITH, L. C.
1954 Larch sawfly conditions in the Lake States in 1953. L. S. Misc. Rpt. 25, 6 pp., illus. (Processed.)

_____
* 1955 Larch sawfly conditions in the Lake States in 1954--a reconnaissance survey. L. S. Misc. Rpt. 34, 8 pp., illus. (Processed.)

_____ and MacALONEY, H. J.
* 1955 The more important forest insects in the Lake States in 1954. L. S. Misc. Rpt. 36, 9 pp., illus. (Processed.)

BENJAMIN, D. M.; BATZER, H. O.; and EWAN, H. G.
1953 The lateral-terminal elongation growth rates of red pine as an index of Saratoga spittlebug injury. Jour. Forestry 51: 822-823.

_____
1953 Pine sawfly. Amer. Forests 59(8): 11, 50-51, illus.

_____ and DROOZ, ARNOLD T.
* 1954 Parasites affecting the jack-pine budworm in Michigan. Jour. Econ. Ent. 47: 588-591.

_____
* 1955 The biology and ecology of the red-headed pine sawfly. U. S. Dept. Agr. Tech. Bul. 1118, 57 pp., illus.

_____; LARSON, J. DONOVAN; and DROOZ, ARNOLD T.
* 1955 The European pine sawfly on the Henderson State Forest, Illinois, with notes on its biology and control. Jour. Forestry 53: 359-362, illus.

BUTCHER, J. W., and EATON, C. B.
1952 The larch sawfly epidemic in the Lake States; surveys and spraying experiments in 1949 and 1950. U. S. Agr. Res. Adm., E-841, 7 pp., illus. (Processed.)

DROOZ, A. T.
1953 Larch sawfly investigations in Minnesota, 1952. Jour. Econ. Ent. 46: 826-828.

_____
1953 The wharf borer problem in Milwaukee, Wis. North Cent. States Branch, Amer. Ent. Soc. Proc. 1953: 22-23. (Processed.)

DROOZ, ARNOLD T., and MEYER, DANIEL
* 1955 Determination of the age of tamarack twigs and an indication of aborted twig elongation. Jour. Forestry 53: 454-455, illus.

_____ 1955 Tamarack defoliation as related to larch sawfly flight characteristics. No. Cent. Branch, Ent. Soc. Amer. Proc. 10: 26-27. (Processed.)

EATON, C. B.
1952 Problems involved in cooperative spraying agreements. In Proc. of a Conf. on "Economic aspects of current larch sawfly injury to tamarack," Minn. Dept. Agr. Cir. 204, pp. 25-32. (Processed.)

_____
* 1955 The Saratoga spittlebug. U. S. Forest Serv. Forest Pest Leaflet 3, 4 pp., illus.

GRAHAM, S. A.
1924 Forest entomological problems in the Lake States. Jour. Forestry 22: 24-28.

_____ 1925 The felled tree as an ecological unit. Ecology 6: 397-411.

_____ 1925 Two dangerous defoliators of jack pine. Jour. Econ. Ent. 18: 337-345.

_____ 1926 Biology and control of the white pine weevil, Pissodes strobi (Peck). Cornell Agr. Expt. Sta. Bul. 449, 32 pp., illus.

_____ 1926 The fight on forest pests in the Lake States. Amer. Lumberman 2662: 61-62, illus.

and BAUMHOFER, LYNN G.
_____ 1927 The pine tip moth in the Nebraska National Forest. Jour. Agr. Res. 35: 323-333.

HELLER, R. C.; COYNE, J. F.; and BEAN, J. L.
1955 Airplanes increase effectiveness of southern pine beetle surveys. Jour. Forestry 53: 483-487, illus.

HODSON, A. C., and ZEHNGRAFF, P. J.
1946 Budworm control in jack pine by forest management. Jour. Forestry 44: 198-200.

JAYNES, H. A., and DROOZ, A. T.
1952 The importance of parasites in the spruce budworm infestations in New York and Maine. Jour. Econ. Ent. 45: 1057-1061.

MacALONEY, H. J., and SECREST, H. C.
* 1944 The more common insects attacking young coniferous plantations and natural stands on the national forests of the Lake States and suggestions for preventing and controlling injury. Region 9 U. S. Forest Serv., 15 pp. (Processed.)

_____
* 1944 Relation of root condition, weather, and insects to the management of jack pine. Jour. Forestry 42: 124-129, illus.

RUDOLF, PAUL O.
1935 Review of "Klucz do oznaczania wazniejszych szkodliwych owadow lesnych (Key for the identification of important forest insect pests)," by Marjan Nunberg. Jour. Forestry 33: 949-950.

_____
1951 Red pine and the European pine shoot moth in southern Michigan. Mich. Acad. Sci., Arts, and Letters Papers (1949 meeting) 35: 61-67, illus.

SECREST, H. C.; MacALONEY, H. J.; and LORENZ, R. C.
1941 Causes of the decadence of hemlock at the Menominee Indian Reservation, Wisconsin. Jour. Forestry 39: 3-12, illus.

_____
* 1944 Damage to red pine and jack pine in the Lake States by the Saratoga spittlebug. Jour. Econ. Ent. 37: 447-448.

STOECKELER, J. H.
1952 Insect control through forest management. Tree Tips, p. 2, illus. Feb.

NOTE: Additional material can be found in other categories such as Disease (Christensen, Anderson, Hodson, and Rudolf--Enemies of aspen).

Forest Disease

ANDERSON, RALPH L., and KAUFERT, FRANK H.
1953 The control of dwarf mistletoe on black spruce. Minn. Forestry Note 13, 2 pp., illus.

_____ and FRENCH, DAVID W.
* 1955 Evidence of races of Cronartium ribicola on ribes. Forest Sci. 1: 38-39, illus.

_____ and SKILLING, D. D.
* 1955 Oak wilt damage--a survey in central Wisconsin. L. S. Sta. Paper 33, 11 pp., illus. (Processed.)

AVERELL, JAMES L.
1928 Review of "Armillaria mellea (Vahl.) Quel., cause du dessechement des forets de chene en Yougo-Slavie (Armillaria mellea (Vahl.) Quel., as the cause of the drying-up of the oak forests in Jugo-Slavia)," by Pierre Georgevitch. Jour. Forestry 26: 367-369.

CHRISTENSEN, CLYDE M.; ANDERSON, RALPH L.; HODSON, A. C.; and RUDOLF, PAUL O.
* 1951 Enemies of aspen. L. S. Aspen Rpt. 22, 16 pp. (Processed.)

Forest Wildlife

ALDOUS, C. M.
1933 Are all hawks and owls detrimental? Minn. Conserv. Aug.

_____ 1934 The possibilities of the Red Lake Wild Life Refuge. Minn. Conserv. Jan.

_____ 1935 The last of the caribou. Natl. Waltonian 3(3): Sept.

_____ 1935 The protectors of our game and fish resources. Minn. Conserv. July.

ALDOUS, C. M.
1937 Notes on the life history of the snowshoe hare. Jour. Mammal. 18: 46-57.

_____ and ALDOUS, SHALER E.
1944 The snowshoe hare--a serious enemy of forest plantations. Jour. Forestry 42: 88-94, illus.

ALDOUS, SHALER E.
1937 A hibernating black bear with cubs. Jour. Mammal. 18: 466-468.

_____
1938 Beaver food utilization studies. Jour. Wildlife Mangt. 2: 215-222.

_____ and SMITH, CLARENCE F.
1938 Food habits of Minnesota deer as determined by stomach analysis. Third No. Amer. Wildlife Conf. Trans. 1938: 756-767.

_____
1938 It's an ill wind that blows no good. Minn. Conserv. 54, p. 33. Feb.

_____ and SMITH, CLARENCE F.
1939 Fall and winter food habits of deer in northeastern Minnesota. Bur. Biol. Survey Wildlife Res. and Mangt. Leaflet BS 137, 10 pp. (Processed.)

_____
1939 Pine in the diet of white-tailed deer. Jour. Forestry 37: 265-267.

_____
1940 A method of marking beaver. Jour. Wildlife Mangt. 4: 145-148, illus.

_____
1940 Notes on a black-footed ferret raised in captivity. Jour. Mammal. 21: 23-26.

_____
1941 Deer management suggestions for northern white-cedar types. Jour. Wildlife Mangt. 5: 90-94, illus.

_____
1941 Food habits of chipmunks. Jour. Mammal. 22: 18-24.

ALDOUS, SHALER E.
1942 The white-necked raven in relation to agriculture. U. S. Fish and Wildlife Serv. Res. Rpt. 5, 56 pp., illus.

_____
1946 Live trapping and tagging muskrats. Jour. Wildlife Mangt. 10: 42-44.

_____ and KREFTING, LAURITS W.
1946 The present status of the Isle Royale moose. Eleventh No. Amer. Wildlife Conf. Trans. 1946: 296-308.

_____
* 1947 Some forest-wildlife problems in the Lake States. L. S. Sta. Paper 6, 11 p. (Processed.)

_____
1949 Experimental planting of food and cover for deer. U. S. Fish and Wildlife Serv. Wildlife Leaflet 320, 9 pp., illus. (Processed.)

_____
1952 Deer browse clipping study in the Lake States region. Jour. Wildlife Mangt. 16: 401-409, illus.

FISHER, P. L.; BRIGGS, A. H.; ELKINS, W. A.; and ROE, E. I.
1935 Propagation of game food and cover plants of the Lake States. 81 pp. (Processed.)

HARRIS, DAVE, and ALDOUS, SHALER E.
1946 Beaver management in the northern Black Hills of South Dakota. Jour. Wildlife Mangt. 10: 348-353.

KREFTING, LAURITS W., and BRAMER, ALTON
1944 Wildlife conservation at Grand Portage. U. S. Indian Serv., Indians at Work, pp. 19-21, illus.

_____ and ROE, EUGENE I.
1949 The role of some birds and mammals in seed germination. Ecol. Monog. 19: 269-286.

_____ and STENLUND, M. H.
1951 Poor winter yards--fewer deer. Conserv. Volunteer 14(80): 16-20, illus.

KREFTING, LAURITS W.
1951 What is the future of the Isle Royale moose herd? Sixteenth No. Amer. Wildlife Conf. Trans. 1951: 461-472, illus.

_____
1953 Effect of cutting mountain maple on the production of deer browse. Univ. of Minn. Forestry Note 21, 2 pp. (Processed.)

_____ and STOECKELER, JOSEPH H.
* 1953 Effect of simulated snowshoe hare and deer damage on planted conifers in the Lake States. Jour. Wildlife Mangt. 17: 487-494.

_____; ERICKSON, A. B.; and GUNVALSON, V. E.
1955 Results of controlled deer hunts on the Tamarack National Wildlife Refuge. Jour. Wildlife Mangt. 19: 346-352, illus.

_____; HANSEN, H. L.; and STENLUND, M. H.
1955 Use of herbicides in inducing regrowth of mountain maple for deer browse. Univ. of Minn. Forestry Note 42, 2 pp. (Processed.)

LAKE STATES FOREST EXPERIMENT STATION
1938 Food habits of Minnesota deer. L. S. Tech. Note 133, 1 p. (Processed.) Also "Deer food conditions," Wis. Conserv. Bul. 3(4). April.

LeBARRON, R. K.
1939 The sportsman and the forest. Mpls. Athletic Club Gopher: 12-13. Sept.

_____ and ALDOUS, SHALER E.
1945 Jack pine versus deer browse. Minn. Conserv. Volunteer 8(48): 23-24, illus.

MARTIN, F. R., and KREFTING, L. W.
1953 The Necedah Refuge deer irruption. Jour. Wildlife Mangt. 17: 166-176, illus.

ROE, EUGENE I.
1948 Effect of red squirrels on red pine seed production in off years. Jour. Forestry 46: 528-529.

RUDOLF, PAUL O.
* 1949 Porcupines' preferences in pine plantations. Jour. Forestry 47: 207-209, illus.

SMITH, CLARENCE F., and ALDOUS, SHALER E.
1947 The influence of mammals and birds in retarding artificial and natural reseeding of coniferous forests in the United States. Jour. Forestry 45: 361-369.

SMITH, LLOYD L., JR.; KREFTING, LAURITS W.; and BUTLER, ROBERT L.
1952 Movements of marked walleyes, Stizostedion vitreum vitreum (Mitchell), in the fishery of the Red Lakes, Minnesota. Amer. Fisheries Soc. Trans. (1951) 81: 179-196, illus.

_____ and _____
1954 Fluctuations in production and abundance of commercial species in the Red Lakes, Minnesota, with special reference to changes in the walleye population. Amer. Fisheries Soc. Trans. (1953) 83: 131-160, illus.

VESALL, D. B.; NYMAN, R. W.; and GENSCH, R. H.
1947 The relation of beaver to swamp timber management in Koochiching County, Minnesota. Soc. Amer. Foresters Proc. 1947: 195-200.

NOTE: Additional material can be found in other categories such as Disease (Christensen, Anderson, Hodson, and Rudolf--Enemies of aspen).

Silvics, Botany, Ecology, and Physiology

AVERELL, JAMES L.
1928 Review of "Om sommarvarmens innflydelse pa arringbreddedn (The influence of summer temperature on the width of the annual ring)," by Erling Eide. Jour. Forestry 26: 370-371.

_____
1928 Review of "Vaxttidsundersokningar a tall och gran (Investigation of the growth period of pine and spruce)," by Lars Gunnar Romell. Jour. Forestry 26: 371-373.

BATES, C. G.
1928 Review of "Foundations of silviculture upon an ecological basis," by James W. Toumey. Jour. Forestry 26: 1020-1023.

BATES, C. G.
1928 Review of "The root system of pine (Pinus sylvestris): A morphological investigation," by E. Laitakari (Finland). Jour. Forestry 26: 1034-1037.

_____
1929 The precise expression of "dryness." Sci. 69(1793): 497.

GEVORKIANTZ, S. R.
1928 Review of "The principal biochemical law," by Prof. S. L. Ivanov. Jour. Forestry 26: 1037-1039.

_____ and ROE, E. I.
1935 Photoperiodism in forestry. Jour. Forestry 33: 599-602.

_____; RUDOLF, PAUL O.; and ZEHNGRAFF, PAUL J.
1943 A tree classification for aspen, jack pine, and second-growth red pine. Jour. Forestry 41: 268-274, illus.

HEINSELMAN, M. L.
* 1954 The extent of natural conversion to other species in the Lake States aspen-birch type. Jour. Forestry 52: 737-738.

_____ and ZASADA, Z. A.
* 1955 A review of literature relating to quaking aspen sites. L. S. Sta. Paper 32, 61 pp. (Processed.)

KITTREDGE, JOSEPH, JR.
1925 A proposed classification of the forest types of the Lake States. Jour. Forestry 23: 890-895.

_____
1928 Review of "A guide to the wild flowers," by Norman Taylor. Jour. Forestry 26: 702-703.

_____
1934 Evidence of the rate of forest succession on Star Island, Minnesota. Ecology 15: 24-35.

LAKE STATES FOREST EXPERIMENT STATION
* 1937 Extensions in the range of Lake States trees. L. S. Tech. Note 129, 1 p. (Processed.) Also Jour. Forestry 36: 437-438. 1938.

LeBARRON, R. K., and EYRE, F. H.
1939 The release of seeds from jack pine cones. Jour. Forestry 37: 305-309, illus.

_____
1945 Annotated bibliography of black spruce. 10 pp. (Processed.)

ROE, E. I., and RUDOLF, PAUL O.
1937 A new station for hemlock in Minnesota. Torreya 37: 10-14. Feb.

1938 Lake States tree ranges. Western Trees, Parks, and Foresters 1(2): 12.

1945 Know your trees: 25 native trees every southern Minnesota scout should know. St. Paul Area Council, Boy Scouts of Amer., 13 pp. (Processed.)

1948 Early seed production by balsam fir and white spruce. Jour. Forestry 46: 529.

1948 Tamarack: Promising species for Minnesota. Conserv. Volunteer 11(64): 49-50.

RUDOLF, PAUL O.
1936 Review of "Om granens kottsattning, dess periodicitet och samband med temperatur och nederbord (The cone-setting of spruce, its periodicity and relation to temperature and precipitation)," by Lars Tiren. Jour. Forestry 34: 444-445.

and RALSTON, R. A.
* 1953 Do age of mother trees and age of cones affect development of young jack pine? Jour. Forestry 51: 121-124.

SHANTZ, H. L., and ZON, RAPHAEL
1924 The natural vegetation of the United States. Part 1, Sec. E, Atlas Amer. Agr., 29 pp., illus., U. S. Bur. Agr. Econ.

SHIRLEY, HARDY L.
1931 The influence of light and temperature upon the utilization by young seedlings of organic reserves in the seed. Amer. Jour. Bot. 18: 717-727.

1931 Light sources and light measurements. Plant Physiol. 6: 447-466.

SHIRLEY, HARDY L.
1932 Light intensity in relation to plant growth in a virgin Norway pine forest. Jour. Agr. Res. 44: 227-244.

1932 Pine seedlings show response to sunlight in growth and density. U. S. Dept. Agr. Yearbook 1932: 292-294.

1934 A method of studying drought resistance in plants. Sci. 79(2036): 14-16.

1934 Observations on drought injury in Minnesota forests. Ecology 15: 42-48.

1935 Light as an ecological factor and its measurement. Bot. Rev. 1: 355-381.

1936 The effects of light intensity upon seed plants. Chap. 21 of "Biological effects of radiation." Publ. by McGraw-Hill.

1936 Lethal high temperatures for conifers and the cooling effect of transpiration. Jour. Agr. Res. 53: 239-258.

1936 The utilization of solar radiation by forests. Amer. Met. Soc. Bul. 17(3): 64-67.

1936 Will pine or aspen dominate Minnesota forests? Minn. Acad. Sci. Proc. 4: 25-28.

STOECKELER, JOSEPH H.
1950 Alkali tolerance of drought-hardy trees and shrubs in the seed and seedling stage. Minn. Acad. Sci. Proc. (1945, 1946, and 1947 meetings) 13, 14, 15: 79-83.

1952 A northeastward extension of the range of Douglas-fir. Jour. Forestry 50: 393.

WACKERMAN, A. E.
* 1925 Jack pine--the Cinderella of the Lake States. Amer. Lumberman 2613: 61, June 13.

WILDE, S. A., and SCHOLZ, H. F.
1930 The basis for subdividing mountainous forests for the purpose of management. Jour. Forestry 28: 1104-1109, illus.

ZON, RAPHAEL, and SHANTZ, H. L.
1924 Map of natural vegetation. U. S. Dept. Agr.

_____
1928 Forestry versus climate. Jour. Forestry 26: 711-713.

_____
1936 Review of "Tree flowers of forest, park, and street (The drawings from nature by Olga A. Smith)," by W. E. Rogers. Sat. Rev. of Lit. 13(22), March 28.

NOTE: Additional material can be found in other categories such as Artificial Regeneration (Stoeckeler--Ecological factors influencing reforestation in the Lake States).

Estimation of Timber Volume

AVERELL, JAMES L.
1928 A special slide rule for foresters. Jour. Forestry 26: 722-723.

BLYTHE, R. H., JR., and GEVORKIANTZ, S. R.
1936 A simplified technique of constructing merchantable board foot volume tables. Volume Table Handbook, Reg. 9, 32 pp. (Processed.) Also Jour. Agr. Res. 55: 159-174. 1937.

BROWN, R. M.
1929 Tables for determining the volume of black spruce. Univ. of Minn. Tech. Bul. 57, 16 pp.

_____ and GEVORKIANTZ, S. R.
1934 Volume, yield, and stand tables for tree species in the Lake States. Minn. Agr. Expt. Sta., Tech. Bul. 39, 208 pp. (A revised ed.)

CHASE, CLARENCE D.
* 1948 Cumulative tallying brought up to date. Iowa State Col. Jour. Sci. 22: 333-339.

DUERR, WILLIAM A.
1938 Comments on the general application of Gehrhardt's formula for approach toward normality. Jour. Forestry 36: 600-604.

GEVORKIANTZ, S. R.
1928 The use of canes by foresters. Jour. Forestry 26: 1064.

_____
1934 A hypsometer for woodsmen. Jour. Forestry 32: 611-612.

_____
1936 Rules of thumb for log scaling. Jour. Forestry 34: 593.

_____ and DUERR, WILLIAM A.
1939 Volume and yield of northern white-cedar in the Lake States. 55 pp. (Processed.)

_____ and OCHSNER, H. E.
1943 A method of sample scaling. Jour. Forestry 41: 436-439.

_____ and AAMODT, E. E.
1945 Volume-growth slide rule. Jour. Forestry 43: 652-653, illus.

_____
* 1947 Guide for estimating defect in northern hardwoods. Jour. Forestry 45: 128-130.

_____
1947 A handy rule-of-thumb. Jour. Forestry 45: 93.

_____
1947 Review of "Tables for estimating board-foot volume of timber," by Clement Mesavage and James W. Girard. Jour. Forestry 45: 56.

_____
1948 For more and better oak ties. Cross Tie Bul. 29(12): 18-20, 22, illus. Also Lake States Timber Dig. 3(9): 3-4, illus. 1949.

GEVORKIANTZ, S. R., and OLSEN, L. P.
* 1955 Composite volume tables for timber and their application in the Lake States. U. S. Dept. Agr. Tech. Bul. 1104, 51 pp., illus.

GIRARD, JAMES W., and GEVORKIANTZ, S. R.
1939 Timber cruising. U. S. Forest Serv., 160 pp. (Processed.)

LAKE STATES FOREST EXPERIMENT STATION
1937 Volume tables used in connection with the forest survey. Part I, Lake States; Part II, Kansas. L. S. Econ. Note 8, unpaged. (Processed.)

MACON, JOHN W., and GEVORKIANTZ, S. R.
1942 Estimating volume on the spot. Jour. Forestry 40: 652-655, illus.

SCHOLZ, HAROLD F.
1937 Diameter outside bark as an index of bark thickness at breast height for red and chestnut oak. Black Rock Forest Papers 1(8): 50-52.

STOECKELER, J. H., and STOLTZ, E. R.
1951 Caliper-gauges for measuring diameters of small trees. Jour. Forestry 49: 738-739.

ZILLGITT, W. M., and GEVORKIANTZ, S. R.
* 1946 Estimating cull in northern hardwoods. L. S. Sta. Paper 3, 7 pp. (Processed.) Also Lake States Timber Dig. 1(10): 12-13. 1947.

_____ and _____
* 1948 Estimating cull in northern hardwoods with special reference to sugar maple. Jour. Forestry 46: 588-594.

Estimation of Timber Growth and Yield

DUERR, W. A.
1937 Growth in uneven-aged timber stands. 11 pp. (Processed.)

_____ and GEVORKIANTZ, S. R.
1938 Growth predictions and site determination in uneven-aged timber stands. Jour. Agr. Res. 56: 81-98.

GEVORKIANTZ, S. R.
1927 A new growth percent formula. Jour. Forestry 25: 44-49.

_____ and HOSLEY, N. W.
1929 Form and development of white pine stands in relation to growing space. Harvard Forest Bul. 13, 83 pp., illus.

_____ and ZON, RAPHAEL
1930 Second-growth white pine in Wisconsin. Wis. Agr. Expt. Sta. Res. Bul. 98, 40 pp., illus.

_____
1934 Approach of understocked stands to normality. Jour. Forestry 32: 487-488.

_____
1937 The approach of northern hardwood stands to normality. Jour. Forestry 35: 487-489.

_____ and DUERR, WILLIAM A.
1937 A yield table for northern hardwoods in the Lake States. Jour. Forestry 35: 340-343.

_____ and _____
1938 Methods of predicting growth of forest stands in the forest survey of the Lake States. L. S. Econ. Note 9, 59 pp. (Processed.)

_____
1940 Comments on "The approach of loblolly and Virginia pine stands toward normal stocking," by L. E. Chaiken. Jour. Forestry 38: 512-513.

_____ and SCHOLZ, HAROLD F.
1944 Determining site quality in understocked oak forests. Jour. Forestry 42: 808-811.

_____
1944 Measuring stand normality. Jour. Forestry 42: 503-508, illus.

_____
* 1947 Growth and yield of jack pine in the Lake States. L. S. Sta. Paper 7, 11 pp. (Processed.)

_____
1947 More about numerical expression of stocking in terms of height. Jour. Forestry 45: 203.

GEVORKIANTZ, S. R., and OLSEN, LUCILLE P.
* 1948 An improved increment-core method for predicting growth of forest stands. L. S. Sta. Paper 12, 19 pp., illus. (Processed.)

_____ and SCHOLZ, H. F.
* 1948 Timber yields and possible returns from the mixed-oak farmwoods of southwestern Wisconsin. Wis. Dept. Conserv. Publ. 521, 72 pp., illus.

_____ and OLSEN, LUCILLE P.
* 1950 Growth and yield of upland balsam fir in the Lake States. L. S. Sta. Paper 22, 24 pp. (Processed.)

GUILKEY, PAUL C.
* 1948 Preliminary report on growth factors for jack pine, black spruce, and aspen in the Central Pine district of Minnesota. 2 pp. (Processed.)

_____ and GEVORKIANTZ, S. R.
1949 Allowable cut. L. S. Misc. Rpt. 4, 8 pp. plus 4 tables. (Processed.)

_____
1954 Growth versus allowable cut. Jour. Forestry 52: 257-259.

KITTREDGE, JOSEPH, JR., and GEVORKIANTZ, S. R.
1929 Forest possibilities of aspen lands in the Lake States. Minn. Agr. Expt. Sta. Tech. Bul. 60, 84 pp., illus.

_____ and CHITTENDEN, A. K.
1929 Oak forests of northern Michigan. Mich. Agr. Expt. Sta. Spec. Bul. 190, 47 pp., illus.

LeBARRON, RUSSELL K.
1945 Review of "Growth and occurrence of spruce and fir on pulpwood lands in northern Michigan," by A. G. Bowman. Jour. Forestry 43: 149-150.

RALSTON, ROBERT A.
* 1954 Some effects of stand density on the height growth of red pine on poor sites in northern Lower Michigan. Mich. Acad. Sci., Arts, and Letters Papers (1953 meeting) 39: 159-165.

SCHOLZ, HAROLD F.
1948 Diameter-growth studies of northern red oak and their possible silvicultural implications. Iowa State Col. Jour. Sci. 22: 421-429.

* 1952 Age variability of northern red oak in the Upper Mississippi woodlands. Jour. Forestry 50: 518-521, illus.

SHIRLEY, HARDY L.
1939 Review of "Tree growth," by Daniel T. MacDougal. Jour. Forestry 37: 426-427.

and ZEHNGRAFF, PAUL
1942 Height of red pine saplings as associated with density. Ecology 23: 370.

STOECKELER, J. H.
1951 Experimental plots reveal growth rate of pine and spruce. Tree Tips, p. 2, illus. Feb.

WACKERMAN, A. E.
1924 Growth of the "Grayling pine." Jour. Forestry 22: 796-797.

; ZON, RAPHAEL; and WILSON, F. G.
1929 Yield of jack pine in the Lake States. Wis. Agr. Expt. Sta. Res. Bul. 90, 23 pp., illus.

ZON, RAPHAEL, and SCHOLZ, H. F.
1929 How fast do northern hardwoods grow? Wis. Agr. Expt. Sta. Res. Bul. 88, 34 pp., illus.

Sampling and Research Methodology

ANDERSON, ROBERT T.
1936 Review of "Biomathematics: Being the principles of mathematics for students of biological science," by W. M. Feldman, with introduction by Sir William M. Bayliss. Jour. Forestry 34: 892.

1937 The application of Fourier's series in forest mensuration. Jour. Forestry 35: 293-299.

BATEN, WILLIAM D., and AREND, JOHN L.
1954 A laboratory study of various systematic sampling methods applicable to forest regeneration surveys. Mich. Acad. Sci., Arts, and Letters Papers (1953 meeting) 39: 113-123, illus.

BLYTHE, R. H., JR.
1935 The Chi-square test in frequency curves. Jour. Forestry 33: 759-760.

_____
1936 The accuracy of plantation surveys. Forestry Chron. 12(1): 63-71.

GEVORKIANTZ, S. R.
1933 Determination of errors of estimate of a forest survey. U. S. Forest Serv. Forest Worker, p. 20. March.

_____
1935 Review of "Forest mensuration," by Donald Bruce and Francis X. Schumacher. Jour. Amer. Stat. Assoc. 30: 780.

_____
1935 The statistical method in forest research. Jour. Forestry 33: 974-978.

_____ and ZEHNGRAFF, PAUL
1943 Scaling aspen bolts by the cord. Jour. Forestry 41: 450-452.

_____
1939 Review of "Elementary forest mensuration," by M. R. K. Jerram (with a chapter on "The measurement of forests," by R. Bourne). Jour. Forestry 37: 907.

_____
* 1954 Problems in forest inventory from the forester's point of view. In "Statistics and mathematics in biology." Iowa State Col. pp. 251-262.

KITTREDGE, J., JR., and OLSON, GEORGE T.
1932 Sampling forest types. Mich. Acad. Sci., Arts, and Letters Papers (1931 meeting) 15: 229-237.

LAKE STATES FOREST EXPERIMENT STATION
1936 Introduction to reports of the forest survey of the Lake States: Purpose, methods, standards, and definitions. L. S. Econ. Note 4, 24 pp., illus. (Processed.)

MUDGETT, BRUCE D., and GEVORKIANTZ, S. R.
1934 Reliability of forest surveys. Jour. Amer. Stat. Assoc. 29: 257-281.

STOECKELER, J. H., and SAMSON, N. T.
1948 Iron stakes from army surplus stocks useful for permanent sample plots. Jour. Forestry 46: 530.

WIJKSTROM, STIG
1930 Sample plot method of the Minnesota land economic survey for determining growth and yield. Jour. Forestry 28: 734-738.

NOTE: Additional material can be found in other categories such as Genetics (Gevorkiantz--Notes on statistical methodology in forest tree improvement work).

Timber Resource

CHASE, CLARENCE D.
* 1947 Aspen availability and supply. L. S. Aspen Rpt. 2, 15 pp., illus. (Processed.)

_____
1948 Timber resources, Marquette County, Michigan, 1948. Mich. Dept. Conserv., 51 pp., illus. (Processed.)

_____ and HORN, ARTHUR G.
1951 Timber resources, southwestern section, Lower Peninsula, Michigan, 1950. Mich. Dept. Conserv. 52 pp., illus. (Processed.)

_____ and _____
* 1952 Timber resources, Baraga County, Michigan, 1951. Mich. Dept. Conserv., 19 pp., illus. (Processed.)

CHASE, CLARENCE D.
* 1953 Timber resources of the Muskegon-Saginaw Section, Lower Peninsula, Michigan. Mich. Dept. Conserv. 42 pp., illus. (Processed.)

_____ and HORN, ARTHUR G.
1954 Timber resources: Dickinson and Iron Counties, Michigan, 1952. Mich. Dept. Conserv., 38 pp., illus. (Processed.)

_____
* 1955 Photo-interpretation aids. L. S. Misc. Rpt. 38, 13 pp. (Processed.)

_____ and HORN, ARTHUR G.
* 1955 Timber resources, Cadillac Block, Lower Peninsula, Michigan. Mich. Dept. Conserv., 53 pp., illus. (Processed.)

_____ and _____
* 1955 Timber resources, Houghton and Keweenaw Counties, Michigan. Mich. Dept. Conserv., 41 pp., illus. (Processed.)

CUNNINGHAM, R. N.
1933 Taking stock of Minnesota forests. Minn. Conserv., p. 8. Oct.

_____
1935 Minnesota forests--an inventory. Minn. Conserv. July.

_____ and MOSER, H. C.
1936 New forest statistics for the Lake States. Hardwood Rec. June.

_____
1937 Status of forest survey in the Lake States. 14 pp., illus. (Processed.)

_____ and MOSER, H. C.
1938 The forests of Minnesota (A preliminary survey). 122 pp. (Processed.)

_____ and _____
1938 Forest areas and timber volumes in the Lake States. L. S. Econ. Note 10, 84 pp., illus. (Processed.)

_____
1939 The meaning of the Lake States forest survey. Jour. Forestry 37: 698-700.

CUNNINGHAM, R. N.
1939 Preliminary figures from Lake States forest survey. Jour. Forestry 37: 66-69.

_____; MOSER, H. C.; and WHITE, H. G.
1939 Timber supplies, growth, and depletion in the three Lake States. L. S. Econ. Note 11, 12 pp. (Processed.)

_____ and WHITE, H. G.
* 1941 Forest resources of the Upper Peninsula of Michigan. U. S. Dept. Agr. Misc. Publ. 429, 32 pp., illus.

_____
1944 Research in wood supplies vital to Lake States pulp and paper industry. Paper Mill News 67(39): 108, 110, 114, illus.

_____
1948 Ownership and availability of Lake States pulpwood. Paper Trade Jour. 127(2): 37-39.

_____
* 1948 The present forestry situation in the Lake States. School Sci. and Math., pp. 365-373. May. Also Lake States Timber Dig. 2(20): 3-4, 8-9.

_____ and FOREST SURVEY STAFF
* 1950 Forest resources of the Lake States Region. U. S. Dept. Agr. Forest Res. Rpt. 1, 57 pp., illus.

_____
1951 Changes in forest conditions 1936-1949, north-central Minnesota and Upper Peninsula of Michigan (A preliminary analysis). L. S. Sta. Paper 25, 20 pp., illus. (Processed.)

DEMMON, E. L.
* 1946 Lake States forests and the pulp and paper industry. L. S. Sta. Paper 5, 10 pp. (Processed.) Also Lake States Timber Dig. 2(2): 3, 4, and 2(3): 6, 12; and Pulp and Paper Mag. Canada 48(7): 92-100.

_____
1947 Available pulp timber stands in the Lake States. In "Pulpwood: Stands, procurement, and utilization." Tappi Monog. Ser. 4, pp. 40-51.

DICKERMAN, M. B.
1951 Recent trends in Lake States timber resources and industries. L. S. Misc. Rpt. 17, 9 pp. (Processed.)

_____
* 1954 The changing forests of the Lake and Central States Region. L. S. Misc. Rpt. 31, 10 pp. (Processed.) Also Lake States Timber Dig. 8(9): 1, 3, 6-7, 10-11, illus.; and Soc. Amer. Foresters Proc. (1954): 1-4.

_____ and McGUIRE, JOHN R.
1955 Domestic supply of forest land and timber. Chap. II in Timber Resource Rev., U. S. Forest Serv., 69 pp., illus. (Processed.) (Prelim. Rev. draft.)

DICKINSON, S. K., JR.; HORN, ARTHUR G.; and GUILKEY, PAUL C.
1952 The forest resource of Beltrami County. (Minn.). Off. of Iron Range Res. and Rehab., 66 pp., illus.

GUILKEY, PAUL C.
1949 Forest resources of Crow Wing County. (Minn.): Growth and allowable cut (Suppl.). Off. of Iron Range Res. and Rehab., pp. 67-76.

_____; GRANUM, BERNARD; and CUNNINGHAM, R. N.
* 1954 Forest statistics for Minnesota, 1953. L. S. Sta. Paper 31, 36 pp., illus. (Processed.)

_____ and DICKERMAN, M. B.
* 1955 Minnesota's changing timber resources. Minn. Conserv. Volunteer 18(106): 1-8, illus. Also Forest Prod. Jour. 5: 112-114, illus.; and Timber Prod. Bul. (Duluth) 10(11): 4-7.

HOLCOMB, CARL J., and HERBERT, PAUL A.
1943 Availability of farm timber for Michigan's wood-using industry. Mich. Agr. Expt. Sta. Quart. Bul. 25(4): 356-360.

HORN, ARTHUR G.
1952 Comparison of the supply of tamarack with other Lake States species. In Proc. of a Conf. on "The economic aspects of current larch sawfly injury to tamarack," Minn. Dept. Agr. Cir. 204, pp. 4-7. (Processed.)

KITTELSON, J. MARVIN; HORN, ARTHUR G.; and GUILKEY, PAUL C.
* 1951 The forest resource of Itasca County. (Minn.). Off. of Iron Range Res. and Rehab., 66 pp., illus.

LAKE STATES FOREST EXPERIMENT STATION
1935 The forests of Minnesota: Area and types. L. S. Econ. Note 1, 24 pp. (Processed.)

_____ 1935 The forest situation in the Central Pine District, Minnesota. L. S. Econ. Note 3, 19 pp. plus 17 tables. (Processed.)

_____ 1935 The forest situation in the Cloquet-Superior District, Minnesota. L. S. Econ. Note 2, 16 pp. plus 20 tables. (Processed.)

_____ 1936 Forest areas and timber volumes in Michigan. L. S. Econ. Note 5, 40 pp. (Processed.)

_____ 1937 The forest situation in the hardwood and prairie districts of Minnesota. L. S. Econ. Note 6, 60 pp., illus. (Processed.)

_____ 1946 Revised forest statistics for the Lake States, 1945. L. S. Sta. Paper 1, 27 pp., illus. (Processed.)

_____ * 1948 Forest types and condition classes in the Lake States. L. S. Misc. Rpt. 2, 7 pp. (Processed.)

MACON, JOHN W.; MOSER, H. C.; and CUNNINGHAM, R. N.
1940 Forestry possibilities of Carlton County, Minnesota. L. S. Econ. Note 13, 36 pp. (Processed.)

_____ and DIEMER, JACK A.
1941 The forest situation in Oneida County, Wisconsin. L. S. Econ. Note 14, 27 pp., illus. (Processed.)

_____ 1942 The forest situation in Burnett County, Wisconsin. L. S. Econ. Note 17, 20 pp., illus. (Processed.)

OFFICE OF IRON RANGE RESOURCES AND REHABILITATION and LAKE STATES FOREST EXPERIMENT STATION
* 1953 The forest resource of Hubbard County. (Minn.). Off. of Iron Range Res. and Rehab., 63 pp., illus.

OFFICE OF IRON RANGE RESOURCES AND REHABILITATION and LAKE STATES FOREST EXPERIMENT STATION
* 1953 The forest resource of Lake of the Woods County. (Minn.). Off. of Iron Range Res. and Rehab., 61 pp., illus.

_____ and _____
* 1953 The forest resource of Wadena County. (Minn.). Off. of Iron Range Res. and Rehab., 58 pp., illus.

_____ and _____
* 1954 The forest resource of Becker County. (Minn.). Off. of Iron Range Res. and Rehab., 61 pp., illus.

_____ and _____
* 1954 The forest resource of the Red River Valley. Off. of Iron Range Res. and Rehab., 57 pp., illus.

_____ and _____
* 1954 The forest resource of Pine County. (Minn.). Off. of Iron Range Res. and Rehab., 58 pp., illus.

_____ and _____
* 1954 The forest resource of St. Louis County. (Minn.). Off. of Iron Range Res. and Rehab., 71 pp., illus.

_____ and _____
1954 Minnesota's wood pile. Off. of Iron Range Res. and Rehab., 18 pp., illus.

_____ and _____
* 1955 The forest resource of Lake County. (Minn.). Off. of Iron Range Res. and Rehab., 64 pp., illus.

SANDBERG, LYNN, and HORN, A. G.
* 1948 The forest resource of Crow Wing County. (Minn.). Off. of Iron Range Res. and Rehab., 64 pp., illus.

_____; HORN, ARTHUR G.; and GUILKEY, PAUL C.
* 1949 The forest resource of Aitkin County. (Minn.). Off. of Iron Range Res. and Rehab., 54 pp., illus.

_____; _____; and _____
* 1950 The forest resource of Carlton County. (Minn.). Off. of Iron Range Res. and Rehab., 50 pp., illus.

_____; _____; and _____
* 1950 The forest resource of Cass County. (Minn.). Off. of Iron Range Res. and Rehab., 59 pp., illus.

SANDBERG, LYNN; HORN, ARTHUR G.; and GUILKEY, PAUL C.
* 1950 The forest resource of Clearwater County. (Minn.). Off. of Iron Range Res. and Rehab., 59 pp., illus.

WACKERMAN, A. E.
1928 Some do's and don't's in making a forest survey. Minn. Univ. Forestry Club Gopher Peavey, pp. 58-61.

WARE, E. R.
1936 Forests of South Dakota: Their economic importance and possibilities. 28 pp. (Processed.)

_____ and SMITH, LLOYD F.
* 1939 Woodlands of Kansas. Kans. Agr. Expt. Sta. Bul. 285, 42 pp., illus.

WISCONSIN CONSERVATION DEPARTMENT and LAKE STATES FOREST EXPERIMENT STATION
* 1954 Forest resources of Adams County, Wisconsin. Wis. Forest Inventory Publ. 4, 21 pp. plus app., illus.

_____ and _____
* 1954 Forest resources of Marquette County, Wisconsin. Wis. Forest Inventory Publ. 5, 21 pp. plus app., illus.

_____ and _____
* 1954 Forest resources of Waupaca County, Wisconsin. Wis. Forest Inventory Publ. 2, 22 pp. plus app., illus.

_____ and _____
1954 Forest resources of Waushara County, Wisconsin. Wis. Forest Inventory Publ. 1, 21 pp. plus app., illus.

_____ and _____
* 1955 Forest resources of Chippewa County, Wisconsin. Wis. Forest Inventory Publ. 13, 22 pp. plus app., illus.

_____ and _____
* 1955 Forest resources of Eau Claire County, Wisconsin. Wis. Forest Inventory Publ. 14, 20 pp. plus app., illus.

WISCONSIN CONSERVATION DEPARTMENT and LAKE STATES FOREST EXPERIMENT STATION
* 1955 Forest resources of Forest County, Wisconsin. Wis. Forest Inventory Publ. 12, 23 pp. plus app., illus.

_____ and _____
* 1955 Forest resources of Jackson County, Wisconsin. Wis. Forest Inventory Publ. 6, 21 pp. plus app., illus.

_____ and _____
* 1955 Forest resources of Juneau County, Wisconsin. Wis. Forest Inventory Publ. 8, 20 pp. plus app., illus.

_____ and _____
* 1955 Forest resources of Monroe County, Wisconsin. Wis. Forest Inventory Publ. 9, 21 pp. plus app., illus.

_____ and _____
* 1955 Forest resources of Oneida County, Wisconsin. Wis. Forest Inventory Publ. 11, 24 pp. plus app., illus.

_____ and _____
* 1954 Forest resources of Portage County, Wisconsin. Wis. Forest Inventory Publ. 3, 22 pp. plus app., illus.

_____ and _____
* 1955 Forest resources of Vilas County, Wisconsin. Wis. Forest Inventory Publ. 10, 24 pp. plus app., illus.

_____ and _____
* 1955 Forest resources of Wood County, Wisconsin. Wis. Forest Inventory Publ. 7, 20 pp. plus app., illus.

ZON, RAPHAEL
1923 The need of an organization for the collection of forest statistics. Cornell Forester.

_____ and SPARHAWK, W. N.
1923 Forest resources of the world. 2 vols., illus. New York.

BULL, W. IRA, and DICKERMAN, M. B.
1944 How Michigan can supply wood for war industries. Mich. State Col. Ext. Folder F-69.

CUNNINGHAM, R. N.
1943 Fuelwood shortage in Lake States revealed as critical situation. Miss. Val. Lumberman 74(39): 23.

_____ 1943 Maximum output of northern Minnesota mills needed to help satisfy heavy lumber demands. Miss. Val. Lumberman 74(10): 7-8.

_____ 1944 Past year's Lake States producer problems reviewed. Miss. Val. Lumberman 75(4): 9-10.

_____ 1945 Minnesota forest industries facing problems of immediate reconversion. Miss. Val. Lumberman 76(42): 7, 19.

DICKERMAN, M. B.
1942 The slack cooperage industry in Minnesota and Wisconsin in light of increased wartime requirements for wooden barrels. L. S. Econ. Note 15, 10 pp. (Processed.)

HALL, ROBERT T., and DICKERMAN, M. B.
* 1942 Wood fuel in wartime. U. S. Dept. Agr. Farmers' Bul. 1912, 22 pp., illus.

HORN, A. G.
1945 4,120,000 cross ties produced in Lake States in 1944. Cross Tie Bul. 26(3): 9-10, 12, 32.

_____ 1948 Distribution of sawmills and lumber production in northern Minnesota. Lake States Timber Dig. 2(26): 6.

_____ * 1950 Commodity drain from forests of the Lake States, 1946. L. S. Misc. Rpt. 7, 31 pp. (Processed.)

_____ * 1950 Commodity drain from forests of the Lake States, 1947. L. S. Misc. Rpt. 9, 31 pp. (Processed.)

HORN, A. G.
* 1950 Commodity drain from forests of the Lake States, 1948. L. S. Sta. Paper 20, 35 pp., illus. (Processed.)

_____ * 1951 Commodity drain from forests of the Lake States, 1949. L. S. Misc. Rpt. 19, 24 pp. (Processed.)

_____ 1951 Lake States mills import less Canadian pulpwood. Lake States Timber Dig. 5(12): 8.

_____ 1951 Michigan's pulpwood harvest, 1950. Timber Prod. Bul. (Upper Mich. and Wis.) 103: 17. Oct.

_____ * 1952 Commodity drain from forests of the Lake States, 1950. L. S. Misc. Rpt. 18, 24 pp. (Processed.)

_____ 1952 Consumption and utilization of tamarack by forest industries of the Lake States. In Proc. of a Conf. on "Economic aspects of current larch sawfly injury to tamarack," Minn. Dept. Agr. Cir. 204, pp. 9-13. (Processed.)

_____ * 1954 Commodity drain from forests of the Lake States. L. S. Misc. Rpt. 26, 25 pp. (Processed.)

JOHNSON, RICHARD C.
1944 The outlook for agricultural veneer containers in southern Michigan. Mich. Agr. Expt. Sta. Quart. Bul. 26(4): 1-9. Also L. S. Econ. Note 20, 11 pp. (Processed.)

_____ 1945 The agricultural veneer container industry in southern Michigan. Mich. Agr. Expt. Sta. Quart. Bul. 27(3): 1-10.

LAKE STATES FOREST EXPERIMENT STATION
* 1937 Fence posts a million dollar crop in Michigan. L. S. Tech. Note 127, 1 p. (Processed.) Also Jour. Forestry 36: 525.

MACON, JOHN W.
1942 The contribution of the Lake States hardwood distillation industry to our war effort. L. S. Econ. Note 16, 14 pp. (Processed.)

MOORE, FRANCIS I., and HUEY, BEN M.
1943 The fuelwood outlook in Minnesota, 1943. L. S. Econ. Note 19, 16 pp. (Processed.)

NEETZEL, JOHN R.
1947 Southern Minnesota produces 54.2 million feet of lumber in 1946. Miss. Val. Lumberman 78(8): 9.

_____
1948 Distribution of sawmills and lumber production in southern Minnesota. Lake States Timber Dig. 2(26): 6.

NOTE: Additional material can be found in other categories, particularly Timber Resource; many of these reports contain timber production statistics.

Forest Economics

ANDERSON, WILLIAM, and ZON, RAPHAEL
1934 Social and economic effects of past land development. Chap. 4 in "Land utilization in Minnesota," by Governor's Com. on Land Utilization. pp. 56-73, Minneapolis.

CUNNINGHAM, R. N.
1931 The land economic surveys in the Lake States. Utah Juniper 2: 7-10.

_____ and FRANK, BERNARD
1932 Tax delinquency and the cut-over land problem in Minnesota. Chap. 5 of "Taxation in Minnesota," by Roy G. Blakey, et al., Univ. of Minn. Studies in Econ. and Business No. 4.

_____
1933 Foresters and land use planning. Mich. Forester 14: 34-35, 44.

CUNNINGHAM, R. N.
1935 Land to spare--a conservation problem in the Lake States. U. S. Dept. Agr. Yearbook 1935: 238-241.

_____ 1935 Review of "Land use in Minnesota," by the Governor's Com. on Land Use, and "A program for land use in northern Minnesota," by O. B. Jesness, Reynolds I. Nowell, and Associates. Jour. Forestry 33: 700-701.

_____ * 1938 What is wrong with the farmwoods? Amer. Forests 44(7): 310.

_____ 1944 Impact of war on our forests. Bur. Agr. Econ. Land Policy Rev. 7(3): 26-30.

_____ 1947 Forest cooperatives in the United States. U. S. Forest Serv. Reappraisal Rpt. 6, 18 pp. (Processed.)

_____ 1954 The public employer's viewpoint: What training in economics and business should the general forestry graduate have? Soc. Amer. Foresters Proc. 1954: 146-148.

DEMMON, E. L.
1946 Lake States Forest Experiment Station warns of critical times. Miss. Val. Lumberman 77(16): 15.

_____ 1947 Review of "Living by the land: Conservation with special reference to proper use of the land," by John C. Gifford. Jour. Forestry 45: 519.

_____ * 1948 Forestry situation in the Lake States. L. S. Sta. Paper 13, 6 pp. (Processed.)

DICKERMAN, M. B.
1945 Present indications of future trends in Michigan forest industries. Mich. Acad. Sci., Arts, and Letters Papers (1944 meeting) 30: 193-201.

DICKERMAN, M. B.
* 1953 Status and trends of forest resources and industry. In "Research in the economics of forestry," by William A. Duerr and Henry J. Vaux, Washington, D. C., pp. 53-60.

_____ 1955 Factors affecting future supply and quality of domestic timber: Forestry assistance programs. Chap. IV, Sect. F of Timber Resource Rev., U. S. Forest Serv., (Preliminary rev. draft), 13 pp. (Processed.)

EYRE, F. H.
1939 Common-sense appraisals for small timber sales. U. S. Forest Serv., Serv. Bul. 23: 3-4. April 17.

FRANK, BERNARD
1933 Wooded pastures vs. pastured woods. U. S. Forest Serv., Serv. Bul. Jan.

_____ 1934 Periodic land use studies for more effective planning. Jour. Forestry 32: 425-429.

GEVORKIANTZ, S. R.; KILP, F. G.; DOSEN, R. C.; and SCHMIDT, O. A.
* 1948 A method of evaluating land for pulpwood production. Jour. Forestry 46: 674-678.

LAKE STATES FOREST EXPERIMENT STATION
1951 A report on the veneer and plywood industry in the Lake States, 1950. 14 pp. (Processed.)

LONGWOOD, F. R.
* 1952 Second-growth woodland can be a financial asset to the farm. Pulp and Paper Mag. Canada 53(7): 176, 177. Also L. S. Tech. Note 371, 1 p. (Processed.)

MAYNE, HOWARD W.
* 1949 The place of forestry in the economic development of the Park Falls area, Wisconsin. L. S. Sta. Paper 19, 24 pp., illus. (Processed.)

MITCHELL, J. A.
1924 The Lake States Forest Experiment Station and the mining industry. Lake Superior Mining Inst. Proc. 1924.

MITCHELL, J. A.
1924 Timber of Upper Peninsula is cash crop. Devlpmt. Bur. News. May 1.

MOSER, H. C.
1933 Progress in land use planning in the Lake States. Oregon Forest School, The Annual Cruise.

_____
1935 The new public domain--what is it? Minn. Conserv. June.

_____
1938 Idle lands--idle men. Minn. State Planning Board, 32 pp., illus.

RALSTON, ROBERT A.
* 1953 Basal area as a guide in estimating logging costs. Jour. Forestry 51: 886-890, illus.

ROE, E. I.
1947 What is a pine plantation worth? Amer. Forests 53: 28-29, 44.

WACKERMAN, A. E.
1926 Current stumpage prices in Minnesota. Jour. Forestry 24: 301-302.

WHITE, HENRY G.
1941 Public forest homesteads. Mich. Acad. Sci., Arts, and Letters Papers 27: 169-180.

_____
1941 Review of "A survey of research in forest land ownership: Report of a special committee on research in forest economics." Jour. Polit. Econ. 49: 295-296.

WILLIAMS, E. T.; DICKERMAN, M. B.; and MARQUIS, R. W.
1955 Factors affecting future supply and quality of domestic timber: Financial and economic factors. Chap. IV, Sect. E of Timber Resource Review (Preliminary review draft), U. S. Forest Serv., 11 pp. (Processed.)

ZASADA, Z. A.; HEINSELMAN, M. L; and VOIGT, G. K.
* 1954 Potential productivity of forest lands in Pine, Carlton, Aitkin, and southern St. Louis Counties, Minnesota. L. S. Misc. Rpt. 30, 53 pp., illus. (Processed.)

ZEHNGRAFF, PAUL, and ZASADA, Z. A.
* 1949 When does a red pine reach highest value? L. S. Tech. Note 311, 2 pp. (Processed.) Also Timber of Canada, p. 47. Jan. 1950.

ZILLGITT, W. M.
* 1948 Optimum economic stocking for northern hardwoods. L. S. Sta. Paper 10, 14 pp. (Processed.)

ZON, RAPHAEL
1922 The world shortage of coniferous timber and Russia's part in supplying it. World Agr. 2(3): 153-154, illus.

1924 Forestry as a part of land utilization. Tri-State Devlpmt. Cong. Minutes and Papers 4: 19-28.

1924 The woodlot in rural organization. Univ. of Minn. Gopher Countryman 1(1): 8-9, illus.

1925 Forestry and land development in the Lake States. Jour. Land and Pub. Util. Econ. 1(1): 36-45.

1925 Forestry and the mining industry in the Lake Superior Region. Lake Superior Mining Inst. Proc. 24: 271-279.

1927 The lumber industry takes the cure. Jour. Forestry 25: 777-779.

1927 The problem of pulpwood supply in the Lake States. Paper Trade Jour. 84: 280-285, illus.

and SPARHAWK, W. N.
1928 America and the world's woodpile. U. S. Dept. Agr. Cir. 21, 15 pp., illus.

1928 Farm problems as seen by a national forester. Devlpmt. Bur. News 7(8): 1, 23.

1928 Forest conditions in Wisconsin. Wis. Com. Forestry Conf. Off. Rpt. 1928: 31-37.

ZON, RAPHAEL
1928 Review of "The new exploration--a philosophy of regional planning," by Benton Mackaye. Jour. Forestry 26: 1029-1030.

_____ 1928 What is industrial forestry? Jour. Forestry 26: 1-4.

_____ 1929 Forestry and the agricultural crisis. Amer. Acad. Polit. and Social Sci. Ann. 142(231): 70-76. Also N. Y. State Col. of Forestry News Letter 29(2): 3-5.

_____ 1931 Forestry and the economic crisis. Amer. Forests 37: 91-92.

_____ 1931 National economic and social objectives in forest policy. Land Util. Conf. Proc., Chicago. Nov.

_____ 1931 The new public domain. Amer. Forests 37(5): 261-264, 280.

_____, et al.
1932 Forest land use in Wisconsin. Com. on Land Use and Forestry Rpt., 156 pp., illus.

_____ 1932 The Upper Peninsula fifty years from now. Devlpmt. Bur. News 12(9). Nov.

_____ 1933 Land use planning by the States. Jour. Farm Econ. 15: 236-242.

_____ 1933 Planned land use. Minn. Conserv., p. 1. Sept.

and SPARHAWK, W. N.
_____ 1933 Trends in world wood consumption. In "A National Program for American Forestry." U. S. Sen. Doc. 12: 279-297. April.

_____ 1934 Forestry throws a life line to stranded communities. Minn. Conserv. 11: 2-3, 14-18, illus. April.

ZON, RAPHAEL, and MOSER, H. C.
1934 Physical and climatic features affecting land use. Chap. 2 in "Land Utilization in Minnesota," by Governor's Com. on Land Util., pp. 34-48.

_____ and _____
1934 Land policies in Minnesota. Chap. 3 in "Land Utilization in Minnesota," by Governor's Com. on Land Util., pp. 49-55.

_____; _____; and CUNNINGHAM, R. N.
1934 Forest lands: Their present condition and future development. Chap. 7 in "Land Utilization in Minnesota," by Governor's Com. on Land Util., pp. 112-135.

_____; FRANK, BERNARD; and MOSER, H. C.
1934 The use of land for recreation. Chap. 8 in "Land Utilization in Minnesota," by Governor's Com. on Land Util., pp. 136-148.

_____ and CUNNINGHAM, R. N.
1934 Future use of land in Minnesota. Chap. 13 in "Land Utilization in Minnesota," by Governor's Com. on Land Util., pp. 223-239.

_____ and _____
1937 The farm woodland--a neglected resource. Univ. of Wis. Ext. Serv. Stencil Cir. 186, 6 pp., illus.

_____ and _____
1937 The need for farm forestry. Minn. Agr. Ext. Div. Spec. Bul. 191, 15 pp., illus.

_____
1938 The relation of land use planning to municipal government in northern Minnesota. Minn. Municipalities 23(9): 322-323.

_____
1939 The human side of land use. Jour. Forestry 37: 735-737.

_____
1939 A scientific discussion of the cutover area of Wisconsin and the Lake States. Wis. Counties 2(2): 12-14.

_____
1941 America's rural slums. U. S. Week 1(26): 14-15. Also Labor Today 1(5): 20-22 (Condensed version.)

ZON, RAPHAEL
1941 The cutover region--breeding place of migrant labor. Wis. Carpenter and Builder, pp. 29-39. Spring issue.

_____ and DUERR, WILLIAM A.
* 1942 Farm forestry in the Lake States: An economic problem. U. S. Dept. Agr. Cir. 661, 34 pp., illus.

_____ 1942 Review of "Ill fares the land," by Carey McWilliams. Midland Cooperator 9(20): 2.

_____ 1944 Toward fuller use of all land. Land Policy Rev. 7(3): 17-21.

NOTE: Additional material can be found in other categories such as Stand Improvement (Engle--Some cost aspects of pruning red pine); and Soils and Water (Lake States Station--Water and mineral resources as related to land use).

Timber Utilization and Marketing

ALLISON, J. H., and CUNNINGHAM, R. N.
1939 Timber farming in the Cloquet district. Minn. Agr. Expt. Sta. Bul. 343, 35 pp., illus.

AMIDON, GEORGE B., and LeBARRON, RUSSELL K.
1944 To what top diameter can spruce pulpwood be cut profitably? Pulp and Paper Mag. Canada 45: 756-758.

ARBOGAST, CARL, JR.
* 1951 Quality of logs and lumber obtained from an improvement cut in second-growth hardwoods in northern Wisconsin. L. S. Sta. Paper 26, 17 pp. (Processed.)

_____ * 1953 Lumber and log grade yields from second-growth northern hardwoods. Jour. Forest Prod. 3: 25-27, 79, illus.

AREND, JOHN L.
1952 Bark loosening effects with 2,4-D, 2,4,5-T, and ammate. Pulp and Paper Mag. Canada 53: 159, 161, 164, illus.

AREND, J. L.; SMITH, R. N.; and RALSTON, R. A.
* 1954 Tests of a portable wood chipper. L. S. Sta. Paper 30, 37 pp., illus. (Processed.)

CREIGHTON, J. W.
1948 Time study of small sawmill air dogs. Mich. Agr. Expt. Sta. Quart. Bul. 31: 41-56.

CUNNINGHAM, R. N.
1939 Some outlets for Minnesota farm-forest products. 5 pp. (Processed.)

DEMMON, E. L.
1946 Use of seasoned wood advocated in building by forest experts. Miss. Val. Lumberman 77(18): 13.

_____
1951 Wood waste in the Lake States. Miss. Val. Lumberman 82(33): 8-9.

DICKERMAN, M. B.
1942 The cooperative association as a wartime aid to the small producer of forest products. L. S. Econ. Note 18, 49 pp. (Processed.)

ENGENE, S. A., and NEETZEL, J. R.
1949 Minnesota farmers spend one week each year fencing. Minn. Farm and Home Sci. 7(1): 11.

GARLAND, HEREFORD, and ZASADA, Z. A.
1948 The increased use of aspen and forest management in the Lake States. Soc. Amer. Foresters Proc. 1948: 69-78.

GEVORKIANTZ, S. R., and ZEHNGRAFF, PAUL
* 1944 More box lumber from small aspen bolts. Miss. Val. Lumberman 75(25): 10-12.

_____
* 1947 Pulpwood volume increased by closer utilization. Jour. Forestry 45: 511. Also L. S. Tech. Note 274, 1 p. (Processed.)

HOLCOMB, CARL J., and BULL, W. IRA
1942 Directory of sawmills and other primary wood-using industries in Michigan. Mich. State Col. Bul., 47 pp.

_____ and HERBERT, PAUL A.
1943 Marketing farm timber in Michigan. Mich. Agr. Expt. Sta. Quart. Bul. 25: 350-355.

HOLCOMB, CARL J., and HERBERT, PAUL A.
1943 Michigan's wood-using industry. Mich. Agr. Expt. Sta. Quart. Bul. 26: 25-31.

HOLMBERG, L. A.
1933 Is suppression a possible cause of bird's-eye maple? Jour. Forestry 31: 968-970.

HORN, ARTHUR G., and SCHOLZ, HAROLD F.
1946 Postwar problems of the cross tie industry in the Lake States. L. S. Sta. Paper 2, 14 pp. (Processed.) Also Lake States Timber Dig. 1(21): 3-4, 8 and 1(22): 10-13; and Cross Tie Bul. 28(2): 7-10 and 28(3): 12, 16, 18. 1947.

JOHNSON, RICHARD C.
* 1946 The sawmill scale (index) board. Mich. Agr. Expt. Sta. Quart. Bul. 28: 181-188, illus.

JOHNSON, R. P. A.; KITTREDGE, JOSEPH, JR.; and SCHMITZ, HENRY
1930 Aspen availability, properties, and utilization. Minn. Agr. Expt. Sta. Tech. Bul. 70, 72 pp., illus.

KAUFERT, F. H.; NEETZEL, J. R.; HOSSFELD, R. L.; and REES, L. W.
1953 Construction of a small low-cost vacuum treating plant. Jour. Forest Prod. 3: 31-33, 79-80, illus.

_____; _____; _____; and _____
1952 A small vacuum treating plant. Minn. Forestry Note 12, 2 pp., illus. (Processed.) Also Jour. Forestry 51: 366-367. 1953.

_____; _____; and _____
1953 This new plant applies wood preservative at relatively low cost. Minn. Farm and Home Sci. 10(3): 10-11, illus.

_____; REES, L. W.; and NEETZEL, J. R.
1955 Durability of pentachlorophenol treated fence posts. Minn. Forestry Note 44, 2 pp. (Processed.)

KAUFMAN, CLEMENS, and WHITE, CHARLES H.
1947 Better lumber through good piling. Minn. Agr. Ext. Folder 104, illus. (Original printing, 1942.)

KLUENDER, W. A.
1945 New market for aspen logs in furniture making. Miss. Val. Lumberman 76(51): 31.

LAWSON, E. L., and ZASADA, Z. A.
1948 Closer utilization of black spruce--an essential to better forest management in Minnesota. Soc. Amer. Foresters Proc. 1947: 119-127.

LeBARRON, RUSSELL K., and SWAYNE, ALLEN P.
* 1940 Retarding needle fall on black spruce Christmas trees. Jour. Forestry 38: 941-943, illus.

LONGWOOD, F. R.
1953 Grade recovery from sugar maple and yellow birch sawlog timber. Timber Prod. Bul. (Upper Mich. and Wis.) 123: 20. June.

NEETZEL, J. R., and ENGENE, S. A.
1949 Fencing is big business. Minn. Agr. Ext. Serv. Farm Business Note 318, p. 3. Also The Wood Saver (Dow Chem.) 2(4): 1-2.

_____
* 1950 A survey of the use of native woods and other building materials on southern Minnesota farms. L. S. Misc. Rpt. 12, 29 pp. (Processed.)

_____
1952 Build good fence corners. MVAIA Newsletter (Minn. Vocational Agr. Instructors Assoc.), pp. 32-33.

_____
1952 Power driving of wood fence posts. Minn. Forestry Note 4, 2 pp., illus. (Processed.)

_____ and KAUFERT, F. H.
1952 Storm shows fencing flaws. Minn. Farm and Home Sci. 9(2): 5, 15, illus.

_____
1953 Building better farm fences. Minn. Agr. Ext. Serv. Ext. Bul. 272, 11 pp., illus.

PANSHIN, ALEXIS J.
* 1950 Dimension stock and other uses of aspen. Timber Prod. Bul. (Duluth) 5(7): 6-7, 11. Also L. S. Aspen Rpt. 12, 18 pp. (Processed.)

REES, L. W., and NEETZEL, JOHN R.
1954 Cold-soaking treatment increases service life of fence posts. Minn. Farm and Home Sci. 11(3): 10-11.

SANDS, WALDO
1945 Utilization of hemlock bark for tanning in the Lake States. Hide and Leather and Shoes 110(2). July 14.

_____ 1946 Arch logging in the Lake States. Miss. Val. Lumberman 77(33): 9.

_____ 1946 Nine suggestions for increasing efficiency of small mills to meet postwar competition in lumber markets. Miss. Val. Lumberman 77(15): 7. Also Timber Prod. Bul. (Duluth) 1(10): 2-3.

_____ 1946 Oak on the high seas. Amer. Forests 52(6): 276-277.

* _____ 1947 Aspen for containers. L. S. Aspen Rpt. 10, 12 pp. (Processed.)

_____ 1947 Michigan furniture company attempts production of dimension stock from slabs. Furniture Mfr. 62(3): 22, 57.

SCHOLZ, HAROLD F.
1944 Quality of side lumber from oak tie bolts in southern Wisconsin and Minnesota. Cross Tie Bul. 25(10): 8-10.

_____ 1944 Tie grades produced in southern Wisconsin. Cross Tie Bul. 25(12): 8, 10, 12.

_____ 1946 Cheese box manufacture in southwestern Wisconsin. Barrel and Box and Packages 51(5): 9-11.

STOECKELER, J. H.
1950 Pulpwood preparation in Scandinavia. Paper Indus. 32: 971.

STUMP, W. G.; AREND, J. L.; and RALSTON, R. A.
1953 The log cutter--a weak link in quality control. Natl. Hardwood Mag. 27(11): 131.

VOGEL, FREDERICK H.
1943 Use of native Michigan timber in the box and crate industry. Mich. State Col. Spec. Bul. 323, 43 pp.

WHITE, CHARLES H.
1942 Home-grown timber for farm buildings. Minn. Agr. Ext. Bul. 238, 16 pp., illus.

WHITE, HENRY G.
1938 An introduction to the study of timber quality in Lake States hardwoods. Mich. Acad. Sci., Arts, and Letters Papers (1937 meeting) 23: 339-348.

ZASADA, ZIGMOND A., and KLUENDER, W. A.
1946 Aspen has promise for a new commercial future. Wood, pp. 22-24. Oct.

_____ and _____
* 1946 The future of aspen in the Lake States. Chemurg. Dig. 5(11): 193, 195-199. Also Miss. Val. Lumberman 77(30): 8-9 and 77(31): 16-17; and L. S. Econ. Note 21, 11 pp. (Processed.)

_____
* 1947 Aspen properties and uses. L. S. Aspen Rpt. 1, 9 pp. (Processed.) Also Cosgrove's Mag. 19(8): 32, 34, 36 and 19(9): 34, 37.

_____
* 1948 Aspen lumber grades and characteristics. L. S. Aspen Rpt. 6, 9 pp. (Processed.) Also Lake States Timber Dig. 3(2): 3 and 3(3): 5-6.

_____ and FREDERICKSON, F. T.
1948 Limits of closer utilization of black spruce pulpwood. Pulp and Paper Mag. Canada 49(11): 128, 130, 132, 134, illus.

_____ and RICHARDSON, C. A.
1949 Logging and pulping black spruce thinnings. Tappi 32: 393-396.

_____
* 1949 Marketing of aspen. L. S. Aspen Rpt. 20, 10 pp. (Processed.)

_____
1949 Portable planers helping small operators in northern Minnesota. Miss. Val. Lumberman 80(41): 12., illus.

ZON, RAPHAEL
1923 Lake States' opportunity for timber production. Amer. Lumberman 2490: 77. Feb. 3.

_____ and GARVER, R. D.
1927 Selective logging in the northern hardwoods of the Lake States with special reference to the costs of handling small and large trees. 23 pp. (Processed.)

NOTE: Additional material can be found in other categories, such as Timber Production Statistics (Horn--Consumption and utilization of tamarack by forest industries in the Lake States).

TECHNICAL NOTES

The Technical Note series was begun in 1928 and is still being continued. Each Note is a 1- or 2-page processed report on current research findings.

Artificial Regeneration

Order No. 4/

*TN 439 AREND, JOHN L. 1955. Development of closely spaced red pine, white pine, and Norway spruce after 40 years.

*TN 19 BATES, CARLOS G. 1930. Why nurserymen prefer southern seeds.

TN 1 LAKE STATES FOREST EXPERIMENT STATION. 1928. Behavior of white, Norway, and jack pine seeds.

TN 2 _____ 1928. Abandoned fields are best sites for forest planting.

*TN 12 _____ 1929. Germination tests of tree seeds.

*TN 15 _____ 1929. Storage of Norway pine seed.

*TN 23 _____ 1930. One year of storage benefits white pine seed.

*TN 24 _____ 1930. Germination tests for coniferous seeds.

*TN 29 _____ 1930. Pre-treatment of white pine seed for spring sowing.

*TN 30 _____ 1931. Centers for collecting seed of Norway pine.

*TN 45 _____ 1931. Helping nature to seed the forest.

*TN 46 _____ 1931. Is light important immediately after germination?

4/ Only the order number is needed for Technical Note requests.

Order No.

TN 55 LAKE STATES FOREST EXPERIMENT STATION. 1932. Neglected plantations seldom successful.

*TN 56 _____ 1932. Dryness--key to storage of pine seed.

TN 60 _____ 1933. Direct seeding can sometimes be used in reforestation.

*TN 63 _____ 1933. Well developed stock necessary for successful planting.

*TN 65 _____ 1933. Grading seedlings.

*TN 80 _____ 1934. Planting under aspen can be made successful.

*TN 87 _____ 1935. How effective is the commercial method of treating green ash?

*TN 88 _____ 1935. Why seeds are dormant.

*TN 89 _____ 1935. How can seed dormancy be determined?

*TN 90 _____ 1935. Some new chemical aids in hastening seed germination.

*TN 96 _____ 1935. Prolonged exposure of roots causes death of planting stock.

*TN 97 _____ 1935. What trees withstand drought best?

*TN 98 _____ 1935. What rainfall factor causes drought damage?

*TN 99 _____ 1935. Seedlings or transplants.

*TN 100 _____ 1935. Effect of shade in reducing soil surface temperatures.

*TN 103 _____ 1936. Planting stock must contend with high surface temperatures.

*TN 104 _____ 1936. Does stock balance affect survival?

TN 106 _____ 1936. Abrasives used in scarifying forest tree seeds.

TN 115 _____ 1936. Nursery shade requirements of ponderosa pine.

Order No.

*TN 117 LAKE STATES FOREST EXPERIMENT STATION. 1936. Winter injury to plantations.

*TN 125 _____ 1937. Heat more injurious than lack of moisture during drought.

*TN 126 _____ 1937. Watering reduces soil-surface temperatures.

*TN 131 _____ 1937. Is spring or fall the better planting season?

*TN 132 _____ 1937. Does freezing injure planting stock?

*TN 137 _____ 1938. Peat or sand for covering on spruce seedbeds?

*TN 139 _____ 1938. Water tables and survival.

*TN 140 _____ 1938. Deep rooting and plantation survival.

*TN 143 _____ 1939. Thinning of conifer seedlings in the nursery produces bigger but fewer plantable trees.

*TN 144 _____ 1939. Beneficial effect of partial shade on field survival.

*TN 145 _____ 1939. Top-pruning of conifer stock a doubtful operation.

*TN 158 _____ 1940. Top-root ratio and size of top very important in fall-planted stock.

*TN 162 _____ 1940. Effect of liquid fertilizers on nursery stock.

TN 169 _____ 1940. Fertilized nursery stock shows increased nursery production and higher field survival.

*TN 170 _____ 1940. When to pick pine cones.

*TN 173 _____ 1941. Storage of red pine seed.

*TN 174 _____ 1941. Blowouts in the sandhills reclaimed by trees.

Order No.

*TN 176 LAKE STATES FOREST EXPERIMENT STATION. 1941. Testing cone ripeness.

*TN 177 _____ 1941. Effect of temperature on germination.

*TN 190 _____ 1942. Root pruning--a labor saver.

*TN 218 _____ 1944. Disking saves the topsoil in forest planting.

*TN 388 RALSTON, R. A. 1953. Some effects of spacing on jack pine development after 25 years.

*TN 256 ROE, EUGENE I. 1946. Restocking black spruce swamps by planting.

*TN 306 _____ 1949. Dense seed spots produce spindly jack pine seedlings.

*TN 353 _____ 1951. Early release from aspen improves yield of pine plantations.

*TN 244 RUDOLF, PAUL O. 1945. Reforestation retarded by war.

*TN 258 _____ 1946. The area reforested in the Lake States.

*TN 265 _____ 1946. Tree species planted in the Lake States.

*TN 275 _____ 1947. Measuring forest nursery stock.

*TN 430 SCHOLZ, HAROLD F. 1955. Growth of northern red oak seedlings under variable conditions of ground cover competition.

*TN 226 STOECKELER, JOSEPH H. 1945. Nutrients in duff and humus layers increase growth of forest plantations.

*TN 233 _____ 1945. Brush shade increases plantation survival on droughty sites.

*TN 276 _____ 1947. Planting poorly drained wet sites.

TN 290 _____ 1948. Killing nursery weeds with oil sprays.

*TN 319 _____ 1949. Correction of soil acidity in conifer nurseries.

Order No.

*TN 339 STOECKELER, JOSEPH H. 1950. Can nurserymen produce white pine seedling stock comparable to transplants?

*TN 343 _____ 1950. How long can conifers be held in spring by cold storage?

*TN 348 _____ 1951. Proper watering in the nursery produces drought-hardy jack pine.

*TN 395 _____ 1953. Lupines as a nursery soil improvement crop.

*TN 432 _____ 1955. Cover crops afford first-year protection for forest plantations against late spring frosts.

Stand Improvement

*TN 281 ARBOGAST, CARL, JR. 1947. Young hardwood crop trees can be selected.

*TN 337 _____ 1950. How much does felling large cull trees damage the understory?

*TN 342 AREND, JOHN L., and MONROE, A. F. 1950. Growth in two oak woodlots following an improvement cut.

*TN 367 _____ and STEPHENSON, JOSEPH R. 1952. Some costs and effects of chemical release of pine in northern Michigan.

*TN 385 _____ and COULTER, L. L. 1952. Frill girdle tests with 2,4,5-T in Lower Michigan.

*TN 401 _____ 1953. Scrub aspen control with basal sprays.

*TN 437 _____ 1955. Tolerance of conifers to foliage sprays of 2,4-D and 2,4,5-T in Lower Michigan.

*TN 438 _____ 1955. Chemical frill girdling in summer and fall gives best results in Lower Michigan.

*TN 407 BLAIR, ROWLAND W., and RALSTON, R. A. 1953. Comparison of man-hours required for thinning and clear cutting pole-size aspen.

Order No.

*TN 314 ENGLE, LaMONT G. 1949. Cutting aspen overstory improves growth of young hardwoods.

*TN 346 _____ 1951. Releasing white pine from oak and aspen.

*TN 351 _____ and SMITH, NORMAN F. 1951. Height growth of thinned red pine.

*TN 238 EYRE, F. H., and ZEHNGRAFF, PAUL J. 1945. Thinnings for pulpwood increase timber yield.

*TN 374 HEINSELMAN, MIRON L. 1952. Labor costs for thinning young aspen.

*TN 411 _____ 1954. Thinning from above reduces total yields in medium site aspen.

*TN 20 LAKE STATES FOREST EXPERIMENT STATION. 1929. How much does it cost to thin?

*TN 51 _____ 1932. Jack pine--pulpwood or sawlogs?

TN 52 _____ 1932. Growing bigger and better aspen.

TN 61 _____ 1933. Release cuttings needed in natural second-growth stands.

*TN 64 _____ 1933. How to thin young Norway pine.

*TN 138 _____ 1938. Earlier returns from thinned red pine.

*TN 160 _____ 1940. Thinned stands fill up rapidly.

TN 166 _____ 1940. Light cuttings in hardwoods show high quality increment.

*TN 167 _____ 1940. Do young second-growth northern hardwoods need care?

TN 186 _____ 1942. Thinnings assume commercial importance.

*TN 360 LONGWOOD, F. R. 1951. Why release young maple from pin cherry?

*TN 386 _____ 1953. Results of improvement cutting in second-growth northern hardwoods in Upper Michigan.

Order No.

*TN 391 RALSTON, R. A. 1953. Time required to prune red pine to various heights.

*TN 405 _____ 1953. Effect of pruning on the growth of red pine.

*TN 408 _____ 1953. Red pine suppressed for forty years responds to release.

*TN 420 _____ 1954. Timing and yields of first commercial thinnings in red pine plantations.

*TN 424 _____ and COULTER, L. L. 1955. Aerial spray tests with 2,4,5-T for scrub oak control in Lower Michigan.

*TN 279 ROE, EUGENE I. 1947. Thinning in cedar swamps.

*TN 377 _____ 1952. Understory balsam fir responds well to release.

*TN 366 SCHOLZ, HAROLD F. 1952. Thinning young oak stands for fuel.

*TN 359 STOECKELER, J. H. 1951. Chemical sprays reduce right-of-way maintenance costs.

*TN 383 _____ 1952. Power-saw girdling saves time in timber stand improvement.

*TN 263 ZEHNGRAFF, PAUL J. 1946. Thinning young aspen can pay.

Harvest Cutting and Natural Regeneration

*TN 378 AREND, JOHN L., and GYSEL, LESLIE W. 1952. Less oak reproduction on better sites.

*TN 392 CONOVER, DAVID F. 1953. Effects of competition on red pine and white pine reproduction.

*TN 277 ENGLE, L. G. 1947. Skidding damage by tractors and horses in selective logging of northern hardwoods.

Order No.

*TN 433 HEINSELMAN, M. L. 1955. Timber blowdown hazard in the Rainy River section of northern Minnesota.

*TN 6 LAKE STATES FOREST EXPERIMENT STATION. 1928. Growth of northern hardwoods after partial cutting.

TN 7 _____ 1928. The forest seed crop of 1928.

*TN 9 _____ 1929. What happens to millions of little trees in a virgin hardwood forest.

*TN 16 _____ 1929. Breakage no obstacle to selective logging.

*TN 28 _____ 1930. Germination and survival of conifers under aspen.

*TN 53 _____ 1932. Aspen and birch follow pine cutting in northeastern Minnesota.

*TN 54 _____ 1932. How to cut black spruce.

*TN 76 _____ 1934. Damage to young growth by logging.

*TN 79 _____ 1934. Mortality in selectively cut northern hardwoods.

*TN 101 _____ 1936. Soil treatment greatly increases jack pine reproduction.

*TN 105 _____ 1936. Natural reproduction is affected by weather conditions.

*TN 118 _____ 1936. Large quantities of seed produced by northern hardwood forest.

*TN 136 _____ 1938. How to obtain effective dispersal of jack pine seed.

*TN 141 _____ 1938. When to cut jack pine.

*TN 146 _____ 1939. Black spruce maintains a year-round seed supply.

*TN 147 _____ 1939. Black spruce seed is a limited air traveler.

Order No.

*TN 148 LAKE STATES FOREST EXPERIMENT STATION. 1939. Jack pine seed habits.

*TN 149 _____ 1939. When do jack pine seeds germinate?

*TN 161 _____ 1940. Effectiveness of soil scarification in promoting jack pine reproduction.

*TN 164 _____ 1940. Relationship of temperature to dispersal of jack pine seeds.

*TN 165 _____ 1940. Jack pine cones in slash open in midsummer.

*TN 168 _____ 1940. Effect of season on germination and early survival.

*TN 172 _____ 1941. The animal factor in natural reproduction of jack pine.

TN 187 _____ 1942. Black spruce should not be cut clean.

*TN 219 _____ 1944. Northern hardwoods can be cut selectively at short intervals.

*TN 231 LeBARRON, RUSSELL K. 1945. What causes mortality in black spruce after partial cutting?

*TN 237 _____ 1945. Mineral soil is favorable seedbed for spruce and fir.

*TN 240 _____ 1945. Shrub growth hinders black spruce reproduction in swamps.

*TN 352 LONGWOOD, F. R. 1951. Ingrowth following cutting in northern hardwoods.

*TN 379 _____ and SALMINEN, W. A. 1952. Reproduction after cutting in hardwood-hemlock stands.

*TN 380 _____ 1952. Mortality following heavy partial cutting in a hardwood-hemlock forest.

*TN 298 NEFF, L. P. 1948. The right kind of black spruce growing stock pays off.

*TN 344 _____ 1950. Classifying black spruce by tree vigor and dominance can aid the tree marker.

Order No.

*TN 381 NEFF, L. P. 1952. Logging damage to reproduction under swamp black spruce.

*TN 334 RALSTON, R. A. 1950. Red pine seedling survival under different levels of stocking.

*TN 363 _____ 1951. Successful natural jack pine regeneration.

*TN 249 ROE, E. I. 1946. Slash removal an important factor in restocking cutover spruce swamps.

*TN 321 _____ 1949. Sphagnum moss retards black spruce regeneration.

*TN 373 _____ 1952. Seed production of a white spruce tree.

*TN 404 _____ 1953. Regeneration of balsam fir guaranteed by continuous reserve of small seedlings.

*TN 254 RUDOLF, PAUL O. 1946. Successful jack pine regeneration in Lower Michigan.

*TN 333 _____ 1950. 1949 a poor tree seed year in the Lake States.

*TN 349 _____ 1951. Lake States forest trees produce good seed crop in 1950.

*TN 370 _____ 1952. 1951 tree seed crops poor to fair in the Lake States.

*TN 393 _____ 1953. 1952 forest tree seed crop fair in Lake States.

*TN 412 _____ 1954. Fair 1953 forest tree seed crop in the Lake States.

*TN 426 _____ 1955. 1954 forest tree seed crop fair in Lake States.

*TN 425 SCHOLZ, HAROLD F. 1955. Effect of scarification on the initial establishment of northern red oak reproduction.

*TN 372 STOECKELER, J. H. 1952. Disking to regenerate pulpwood species.

Order No.

*TN 250 ZEHNGRAFF, PAUL J. 1946 Season of cutting affects aspen sprouting.

*TN 251 _____ 1946. How to improve aspen stocking following summer logging.

*TN 257 _____ 1946. Aspen suckers can produce well-stocked mature stands.

*TN 278 _____ 1947. Response of young aspen suckers to overhead shade.

*TN 297 _____ and GEVORKIANTZ, S. R. 1948. Mortality losses are low in managed forests.

*TN 229 ZILLGITT, WALTER M. 1945. Growth response in sugar maple following light selective cutting.

*TN 234 _____ 1945. Young growth little damaged in selective logging of northern hardwoods.

*TN 247 _____ 1946. Stand changes following light selection cutting.

*TN 324 _____ 1949. Basal area in merchantable trees as an expression of stocking in northern hardwoods.

*TN 340 _____ 1950. Does the partial cutting of northern hardwoods result in inferior reproduction?

*TN 357 _____ 1951. Disking to increase stocking in aspen stands.

Forest Genetics

*TN 5 LAKE STATES FOREST EXPERIMENT STATION. 1928. Climatic seed sources for Norway pine.

*TN 22 _____ 1930. Frost hardiness of races of Norway pine seedlings.

*TN 128 _____ 1937. Seed origin affects survival of green ash in the nursery.

Order No.

TN 153 LAKE STATES FOREST EXPERIMENT STATION. 1939. A fast-growing and winter-hardy poplar hybrid still to be found for the Lake States.

*TN 296 RUDOLF, PAUL O. 1948. Local red pine seed develops best plantations.

*TN 305 _____ 1948. Winter damage to Scotch pine in northern Minnesota.

*TN 423 _____ 1954. Seed source and earliness of shoot growth in young red pine seedlings.

*TN 427 STOECKELER, J. H., and STROTHMANN, R. O. 1955. Early development of native and hybrid aspens.

*TN 440 _____ 1955. European larch seed sources compete successfully with tamarack during 5-year test in northeastern Wisconsin.

Shelterbelts

*TN 245 BATES, C. G. 1945. Wind movement in the plains.

*TN 293 _____ 1948. Shelterbelts as "conservers" of moisture.

*TN 299 _____ 1948. How shelterbelts benefit crops.

*TN 81 LAKE STATES FOREST EXPERIMENT STATION. 1934. Is prairie forest planting practical?

*TN 123 _____ 1937. Subsoiling greatly increases tree survival in Plains region.

*TN 135 _____ 1938. Control of snow drifting by design of windbreaks.

*TN 175 _____ 1941. Saving soil moisture for the trees in the northern Great Plains.

*TN 224 _____ 1944. Save shelterbelts and you save fuel.

Soils and Water

Order No.

*TN 365 AREND, JOHN L., and GYSEL, LESLIE W. 1951. Some effects of soil and topography on oak yields in southern Michigan.

*TN 10 LAKE STATES FOREST EXPERIMENT STATION. 1929. Growth in swamps before and after drainage.

*TN 14 _____ 1929. Interception of rainfall by the forest.

*TN 49 _____ 1931. The growth of a gully.

*TN 91 _____ 1935. Soils as a guide in forest management.

*TN 102 _____ 1936. The protective influence of the forest.

*TN 122 _____ 1937. New device measures use of water by trees.

*TN 124 _____ 1937. Forest litter and gravelly soils--effective conservers of water.

*TN 130 _____ 1937. Forest cover keeps frost line at shallow depth.

*TN 134 _____ 1938. White spruce on alkaline soils.

*TN 142 _____ 1938. The grazed woodlot--potential flood hazard and low-grade pasture.

*TN 369 NEETZEL, JOHN R. 1952. More ungrazed farm woodlots in Minnesota.

Fire

*TN 286 CROSBY, JOHN S. 1948. October 1947 drought conditions cause high forest fire danger in the Lake States.

*TN 328 _____ 1950. Is fire prevention effective?

*TN 21 LAKE STATES FOREST EXPERIMENT STATION. 1930. How long does hardwood slash remain a fire menace?

Order No.

*TN 31 LAKE STATES FOREST EXPERIMENT STATION. 1931. Selective logging and close utilization--a solution to the slash problem in northern hardwoods.

*TN 34 _____ 1931. Fire hinders conversion of aspen to pine and spruce.

*TN 44 _____ 1931. Spring fires on the jack pine plains.

TN 47 _____ 1931. Test of portable hand power fire pumps.

TN 48 _____ 1931. Comparative merits of different portable hand power fire pumps.

*TN 57 _____ 1933. How soon after a fire can damage be determined?

*TN 58 _____ 1933. Fire damage as affected by season of burning.

*TN 59 _____ 1933. Slash disposal--jack pine.

TN 75 _____ 1934. Estimating fire damage in the Lake States.

*TN 77 _____ 1934. Damage to advance growth by slash disposal.

TN 78 _____ 1934. Relative hazard and estimated cost of protection by forest types--Lake States.

*TN 83 _____ 1934. Use of calcium chloride in forest fire control.

*TN 120 _____ 1936. Effect of spring fires on sprout oak stands.

TN 154 _____ 1939. Twenty-five years of forest fires in the Lake States.

TN 199 _____ 1943. More effective measurement of forest fire danger.

*TN 217 _____ 1944. Disking reduces slash fire hazard in the jack pine type.

TN 242 MITCHELL, J. A. 1945. Forest fire control pays.

*TN 280 _____ 1947. Forest fires in the Lake States in 1946.

Order No.

*TN 295 MITCHELL, J. A. 1948. The 1947 forest fire season in the Lake States.

*TN 312 _____ 1949. The 1948 forest fire season in the Lake States.

*TN 416 _____ 1954. Mortality from fire in jack pine stands.

*TN 419 _____ and OLSEN, L. P. 1954. Fire occurrence: Periodicity of good and bad years.

Forest Insects

*TN 376 BENJAMIN, DANIEL M. 1952. The jack-pine budworm--a menace to Michigan jack pine.

*TN 396 _____ 1953. The jack-pine budworm in Michigan.

*TN 414 _____ 1954. The jack-pine budworm in Michigan, 1953.

*TN 428 DROOZ, ARNOLD T. 1955. Head capsule measurements of Minnesota larch sawflies.

Forest Diseases

*TN 400 ANDERSON, RALPH L. 1953. Hypoxylon canker of aspen in the Lake States.

Forest Wildlife

*TN 259 ALDOUS, SHALER E. 1946. Jack pine regeneration retarded by rodents and birds.

*TN 332 ARBOGAST, CARL, JR., and HEINSELMAN, M. L. 1950. Damage to natural reproduction by deer browsing.

*TN 421 KEENER, JOHN, and STOECKELER, J. H. 1954. Logging operations provide winter feed for deer.

Order No.

*TN 361 KREFTING, LAURITS W. 1951. Construction of the Lake States deer exclosure.

*TN 387 _____ 1953. Deer damage to a jack pine plantation in Michigan.

*TN 402 _____ 1953. Snowshoe hare damage to a jack pine plantation in Minnesota.

*TN 413 _____ and STOECKELER, J. H. 1954. Effect of simulated snowshoe hare and deer damage on some conifers planted in the Lake States.

*TN 27 LAKE STATES FOREST EXPERIMENT STATION. 1930. By the forest ye shall know the birds.

*TN 82 _____ 1934. Control of rabbit injury.

*TN 109 _____ 1936. Woody food preferences of the snowshoe rabbit in the Lake States.

*TN 116 _____ 1936. Rabbits cause great losses to plantations in brushy areas.

*TN 121 _____ 1937. Damage from rabbits--a consideration in shelterbelt planting.

*TN 133 _____ 1938. Food habits of Minnesota deer.

*TN 159 _____ 1940. White-cedar for deer food.

*TN 307 RUDOLF, PAUL O. 1949. Porcupine damage to forest plantations.

*TN 326 STOECKELER, J. H. 1950. Porcupine damage in a northern hardwood-hemlock forest of northeastern Wisconsin.

*TN 355 _____ and HEINSELMAN, M. L. 1951. Deer damage may be reduced by use of repellents.

*TN 441 _____ 1955. Deer, mice, and hares damage young aspen and paper birch plantings in northeastern Wisconsin.

Silvics, Botany, Ecology, and Physiology

Order No.

TN 17 LAKE STATES FOREST EXPERIMENT STATION. 1929. How much light do forest trees need?

*TN 18 _____ 1929. Ordinary white daylight is best for growth of trees.

*TN 25 _____ 1930. Ground vegetation--an indicator of forest growth.

*TN 26 _____ 1930. More light in the forest?

*TN 32 _____ 1931. Drought resistance of forest plants.

TN 33 _____ 1931. Effect of forest cover on drought injury to undergrowth.

*TN 35 _____ 1931. Sunlight and forest growth.

TN 50 _____ 1931. The future of aspen in the Lake States.

*TN 67 _____ 1933. Paper birch--a windfirm tree.

TN 84 _____ 1934. Is jack pine a prolific seeder?

*TN 95 _____ 1935. Regional variation in composition of old growth northern hardwood forests.

*TN 119 _____ 1936. Windfirmness of black spruce in residual stands.

*TN 129 _____ 1937. Extensions in the range of Lake States trees.

*TN 152 _____ 1939. Comparative resistance of native Wisconsin trees to snow breakage.

*TN 188 _____ 1942. Jack pine reverts to balsam fir in northeastern Minnesota.

*TN 189 _____ 1942. Upland black spruce not a stable type.

Order No.

*TN 358 RALSTON, R. A. 1951. Is jack pine tree growth affected by age of parent seed?

*TN 368 _____ 1952. Is the growth of jack pine reproduction affected by age of parent tree?

*TN 261 ROE, E. I. 1946. Extended periods of seedfall of white spruce and balsam fir.

*TN 389 _____ 1953. Comparative height growth of native conifers in northeastern Minnesota.

*TN 323 RUDOLF, PAUL O. 1949. Recovery of winter injured pines.

*TN 422 _____ 1954. Age of seed tree and earliness of shoot growth in young red pine seedlings.

*TN 434 SCHOLZ, H. F., and HOVIND, JAMES. 1955. Effect of the micro-site on the condition and early growth of planted black spruce.

*TN 228 ZEHNGRAFF, PAUL J. 1945. Effective seeding range of red pine.

Estimation of Timber Volume

*TN 390 CHASE, CLARENCE D., and GEVORKIANTZ, S. R. 1953. Volume in tops and limbs of sawlog trees.

TN 241 GEVORKIANTZ, S. R. 1945. A composite cordwood volume table for pulpwood species in the Lake States.

*TN 266 _____ 1947. Taper table for aspen (Populus tremuloides)--well-stocked stands.

*TN 283 _____ 1947. Converting volumes between International 1/4-inch rule and Scribner rule.

*TN 287 _____ 1948. Converting volumes between International 1/4-inch rule and the Doyle rule.

*TN 302 _____ 1948. More ties on better sites.

Order No.

*TN 329 GEVORKIANTZ, S. R. 1950. Converting International 1/4-inch gross sawlog scale to peeled total volume in cubic feet.

*TN 338 _____ and GUILKEY, P. C. 1950. Lake States pulpwood cruisers table.

*TN 347 _____ 1951. Distribution of volume in Lake States trees.

*TN 362 _____ and OLSEN, L. P. 1951. Bark percent in Lake States trees.

*TN 375 _____ 1952. A mill-scale log rule.

*TN 382 _____ and OLSEN, L. P. 1952. Cubic content of sawlogs in standing trees.

*TN 409 _____ 1954. The Lake States cruising stick.

*TN 315 GUILKEY, P. C. 1949. Cordwood in tops of conifers and aspen in the Lake States.

*TN 8 LAKE STATES FOREST EXPERIMENT STATION. 1928. Amount of solid wood per cord of sticks of different diameters.

*TN 36 _____ 1931. Open-grown trees of the same height and diameter have less volume.

*TN 37 _____ 1931. Volume of second-growth Norway pine: Board feet--International (1/8") rule.

*TN 38 _____ 1931. Volume of second-growth Norway pine: Board feet--Scribner Dec. C.

*TN 39 _____ 1931. Volume of second-growth Norway pine: Cubic feet.

*TN 40 _____ 1931. Volume of black spruce: Merchantable--cords.

*TN 41 _____ 1931. Volume of black spruce: Cubic feet.

*TN 42 _____ 1931. Volume of second-growth Norway pine: Board feet--International (1/8") rule.

Order No.

*TN 43 LAKE STATES FOREST EXPERIMENT STATION. 1931. Volume of second-growth Norway pine: Board feet--Scribner Dec. C.

*TN 66 _____ 1933. Solid contents of standard cords (peeled black spruce pulpwood).

TN 68 _____ 1933. Volume of sugar maple (board feet--Scribner).

TN 69 _____ 1933. The Lake States cruiser stick.

TN 72 _____ 1933. Determining volumes without volume tables.

*TN 74 _____ 1934. How much solid wood in a cord?

*TN 107 _____ 1936. Scaling cull in standing trees in board feet, Scribner rule.

*TN 108 _____ 1936. Bark thickness of saw-timber trees in Michigan.

*TN 112 _____ 1936. Volume of plantation cottonwood, board feet--Scribner.

*TN 113 _____ 1936. Peeled volume of plantation cottonwood--cubic feet.

TN 114 _____ 1936. Conversion of tree volumes from Scribner to International 1/4" rule.

*TN 151 _____ 1939. Pulpwood volume losses due to peeling and shrinkage.

*TN 155 _____ 1939. Taper table for jack pine (Pinus banksiana)--Lake States.

*TN 184 _____ 1942. Volume of fuel wood in tree tops.

*TN 185 _____ 1942. Cordwood volume table for hardwoods.

*TN 194 _____ 1943. Yields from tie bolts.

*TN 197 _____ 1943. How many pulpwood bolts per cord?

Order No.

*TN 198A LAKE STATES FOREST EXPERIMENT STATION. 1943. Taper Table I. Basswood.

*TN 198B _____ 1943. Taper Table II. Elm.

*TN 198C _____ 1943. Taper Table III. Oak, red and white.

*TN 198D _____ 1943. Taper Table IV. Sugar maple.

*TN 198E _____ 1943. Taper Table V. Yellow birch.

TN 202 _____ 1943. A composite cordwood volume table for the Lake States.

TN 203 _____ 1943. Composite board foot volume tables for the Lake States.

*TN 225 _____ 1944. Quick field-calculator of volume and growth of trees.

*TN 269 ZEHNGRAFF, P. J. 1947. How many small fence posts to a cord?

*TN 255 ZILLGITT, W. M. 1946. A quick method of estimating cull in northern hardwood stands.

Estimation of Timber Growth and Yield

*TN 327 AREND, JOHN L., GUNDERSON, W. R. H., and MONROE, A. F. 1950. Growth of unmanaged oak-hickory woodlots in southern Michigan.

*TN 394 GUILKEY, P. C. 1953. Jack pine growth rates in Minnesota.

*TN 3 LAKE STATES FOREST EXPERIMENT STATION. 1928. Jack pine yields per acre in Michigan, Minnesota, and Wisconsin.

*TN 4 _____ 1928. Growth of northern white-cedar in northern Wisconsin and Minnesota.

*TN 62 _____ 1933. Growth of hardwoods.

Order No.

*TN 70 LAKE STATES FOREST EXPERIMENT STATION. 1933. Jack pine normal stand tables.

*TN 71 _____ 1933. Aspen normal stand tables.

*TN 73 _____ 1934. Stand and yield table for jack pine.

*TN 92 _____ 1935. Growth rate of aspen indicates potential forest cover.

*TN 222 _____ 1944. Does diameter growth response hold above d.b.h.

*TN 268 STOECKELER, J. H. 1947. Yield table for cottonwood plantations.

*TN 300 ZEHNGRAFF, PAUL. 1948. Yields of aspen in unmanaged stands.

*TN 310 _____ 1949. Growth of a managed pine forest.

Sampling and Research Methodology

*TN 181 LAKE STATES FOREST EXPERIMENT STATION. 1942. Short cuts in scaling: I. Measuring sample truck loads.

*TN 182 _____ 1942. Short cuts in scaling: II. Using stacked dimensions to obtain board-foot volume.

*TN 183 _____ 1942. Short cuts in scaling: III. Measuring sample logs.

Timber Resource

*TN 397 CUNNINGHAM, R. N., and FINDELL, VIRGIL. 1953. Resurgence of tamarack in Minnesota.

*TN 410 _____ 1954. Can Wisconsin become self-sufficient in pulpwood?

Order No.

*TN 85 LAKE STATES FOREST EXPERIMENT STATION. 1934. Forest surveys an aid to sustained yield production.

TN 93 _____ 1935. Forest areas in Minnesota.

*TN 303 NEETZEL, JOHN R. 1948. Distribution of Minnesota farm woodland.

*TN 260 ZASADA, Z. A. 1946. Jack pine pole supply in Minnesota.

Timber Production Statistics

*TN 243 CUNNINGHAM, R. N. 1945. Minnesota pole requirements heavy.

*TN 236 HORN, ARTHUR G. 1945. Cross tie production in the Lake States.

*TN 252 _____ 1946. Most Lake States lumber now produced by smaller sawmills.

*TN 284 _____ 1947. Veneer log production in the Lake States continues at high level.

*TN 288 _____ 1948. Aspen takes lead as pulping species in Lake States.

*TN 294 _____ 1948. Lake States operators increase cut of excelsior wood--1946.

*TN 301 _____ 1948. Lake States pulpwood production declines in 1947.

*TN 309 _____ 1949. Minnesota leads Lake States in 1947 pole production.

*TN 313 _____ 1949. Lake States mines use large quantity of wood.

*TN 320 _____ 1949. Near record cut of pulpwood in Lake States--1948.

*TN 336 _____ 1950. Pulpwood harvest declines to prewar level in Lake States--1949.

Technical Notes

Order No.

*TN 364 HORN, ARTHUR G. 1951. Lake States pulpwood production reverses trend, 1950.

*TN 384 _____ 1952. Ten years' pulpwood production in the Lake States (1942-1951).

*TN 398 _____ 1953. 1951 Lake States pulpwood production reaches all time high.

*TN 399 _____ 1953. 1952 Lake States pulpwood production continues at high level.

*TN 403 _____ 1953. Veneer log production declines in Lake States.

*TN 415 _____ 1954. Production indexes for rough forest products--Lake States.

*TN 418 _____ 1954. Aspen makes up nearly one-half of 1953 pulpwood cut in Lake States.

*TN 436 _____ 1954. Production of pulpwood continues at high level in the Lake States, 1955.

*TN 442 _____ 1955. Cut of veneer logs increases in Minnesota, decreases in Wisconsin and Michigan, 1954.

*TN 239 KLUENDER, WILLIAM A. 1945. Fuelwood production lags in Wisconsin.

*TN 110 LAKE STATES FOREST EXPERIMENT STATION. 1936. Fuelwood more valuable than lumber in Minnesota.

TN 111 _____ 1936. Millions of posts needed to repair Minnesota fences.

*TN 127 _____ 1937. Fence posts a million dollar crop in Michigan.

TN 163 _____ 1940. Ten million dollars worth of lumber produced in Wisconsin, 1938.

*TN 178 _____ 1941. Production of lumber, lath, and shingles in Minnesota--1940.

*TN 179 _____ 1941. Production of lumber, lath, and shingles in Wisconsin--1940.

Order No.

*TN 180 LAKE STATES FOREST EXPERIMENT STATION. 1941. Production of lumber, lath, and shingles in Michigan--1940.

TN 191 _____ 1942. Michigan lumber production largest since 1929.

*TN 192 _____ 1942. Minnesota lumber cut largest in eleven years.

TN 193 _____ 1942. War demands strain Wisconsin sawtimber resources.

TN 195 _____ 1943. Hemlock tanbark production should be increased.

TN 200 _____ 1943. How the forest experiment station helps in the war effort.

*TN 201 _____ 1943. Farmer custom sawing is increasing.

TN 204 _____ 1943. Estimated lumber production 1942: Lake States.

TN 205 _____ 1943. Estimated lumber production 1942: Michigan.

*TN 206 _____ 1943. Estimated lumber production 1942: Minnesota.

*TN 207 _____ 1943. Estimated lumber production 1942: Wisconsin.

*TN 208 _____ 1943. Lake States lumber production off 34 percent in 1943.

*TN 209 _____ 1943. 1943 lumber production lagging in Minnesota.

*TN 210 _____ 1943. Michigan lumber production declines in 1943.

*TN 211 _____ 1943. Wisconsin sawmills cutting less lumber in 1943.

TN 212 _____ 1943. Michigan not cutting enough fuelwood.

Order No.

TN 213 LAKE STATES FOREST EXPERIMENT STATION. 1943. Fuelwood scarce in Wisconsin.

TN 214 _____ 1943. Minnesota faces fuelwood shortage.

TN 221 _____ 1944. Elimination of seasonal variation in lumber production--a hopeful trend.

*TN 289 NEETZEL, J. R. 1948. Small sawmills cut much lumber in southern Minnesota.

*TN 317 _____ 1949. Distribution of lumber cut from southern Minnesota.

TN 271 OLSEN, LUCILLE P. 1947. 1946 Michigan lumber production continues at high level.

*TN 272 _____ 1947. Wisconsin lumber production increased in 1946.

*TN 273 _____ 1947. Minnesota sustains high level lumber production in 1946.

*TN 232 SCHOLZ, HAROLD F. 1945. Tie production important in southwestern Wisconsin.

Forest Economics

*TN 11 LAKE STATES FOREST EXPERIMENT STATION. 1929. Returns from selective logging.

*TN 86 _____ 1934. Ownership and use of land determine tax delinquency.

*TN 156 _____ 1940. Employment provided by cutting and processing forest products in the Lake States.

TN 157 _____ 1940. Forests give extensive employment.

*TN 371 LONGWOOD, F. R. 1952. Second-growth woodland can be a financial asset to the farm.

*TN 282 MAYNE, HOWARD W. 1947. Landownership in sixteen northeastern Minnesota counties.

Order No.

*TN 248 NEETZEL, J. R. 1946. Minnesota woodlot yields valuable crop.

*TN 356 STEPHENSON, JOSEPH R., and ENGLE, LaMONT G. 1951. Christmas trees provide early returns from red pine plantations.

*TN 311 ZEHNGRAFF, PAUL, and ZASADA, Z. A. 1949. When does a red pine reach highest value?

*TN 330 _____ 1950. Monetary yields from a managed pine forest.

*TN 235 ZILLGITT, WALTER M. 1945. Part-time woods work of northern farmers helpful in war production.

*TN 270 _____ 1947. Second growth woodland on farms can return an annual income.

*TN 331 _____ 1950. Employment possibilities of a northern Michigan forest.

Timber Utilization and Marketing

*TN 292 CREIGHTON, J. W. 1948. Sawmill air dogs save time.

*TN 316 _____ 1949. Lead adjusting device for circular sawmills.

*TN 354 DEMMON, E. L. 1951. Reducing wood waste in the Lake States.

*TN 274 GEVORKIANTZ, S. R. 1947. Pulpwood volume increased by closer utilization.

*TN 308 _____ 1949. Proportion of various rough products in second-growth stands.

*TN 431 GODMAN, R. M., and SALMINEN, W. A. 1955. Reduction of woods waste from periodic cuts--an index of stand improvement.

*TN 325 GUNDERSON, W. R. H., and MONROE, A. F. 1949. Home-treated fence posts serve well.

Order No.

*TN 417 HESTERBERG, GENE A. 1954. Cull in sugar maple increased by breakage of large limbs during logging.

*TN 264 JOHNSON, RICHARD C. 1946. A simple accurate scale board for small sawmills.

*TN 267 _____ 1947. Lead indicating device for circular sawmill headrigs.

*TN 13 LAKE STATES FOREST EXPERIMENT STATION. 1929. What causes "birds-eye" maple?

*TN 94 _____ 1935. Woods and mill cull in merchantable hardwoods.

*TN 150 _____ 1939. Effect of utilization standards on pulpwood yield.

*TN 171 _____ 1940. How to keep Christmas trees fresh.

*TN 196 _____ 1943. Harvesting maple syrup.

*TN 215 _____ 1944. Overrun of lumber from aspen bolts.

TN 216 _____ 1944. A new trend in small sawmill operation.

*TN 220 _____ 1944. Additional volume of spruce pulpwood gained by utilizing to a 1-1/2-inch top.

TN 223 _____ 1944. Gasoline requirements of small sawmills.

*TN 335 LONGWOOD, F. R. 1950. Log grade recovery on a selection cutting in northern hardwoods of Upper Michigan.

*TN 443 MORGAN, J. T. 1955. Log grades of Iowa timber.

*TN 341 NEETZEL, J. R., and ENGENE, S. A. 1950. What do fence posts cost on an annual basis?

*TN 350 _____ 1951. Cost of setting fence posts in Minnesota.

*TN 429 QUINNEY, D. N. 1955. Sawtimber quality in Michigan.

*TN 435 _____ 1955. Log grades of Minnesota hardwoods.

*TN 345 ROE, E. I. 1950. Sawlogs from a young pine plantation.

Order No.

*TN 230 SANDS, WALDO M. 1945. Selective logging yields higher grade lumber.

*TN 227 SCHOLZ, HAROLD F. 1945. Oak is the favorite tie species in southern Wisconsin.

*TN 246 _____ 1946. Treated paper birch and aspen posts give good service.

*TN 253 _____ 1946. Cutting immature oak timber sacrifices quality increment.

*TN 406 STUMP, WILLIAM G., RALSTON, ROBERT A., and AREND, JOHN L. 1953. Log grading starts in the woods.

*TN 291 ZASADA, Z. A. 1948. Time required to cut black spruce trees.

*TN 304 _____ and ZEHNGRAFF, PAUL J. 1948. Logging costs of aspen.

*TN 318 _____ and _____ 1949. Costs of cutting jack pine.

*TN 322 _____ and _____ 1949. Cost of skidding jack pine.

*TN 262 ZILLGITT, W. M., and SALMINEN, W. A. 1946. Valuable products can be recovered from No. 2 and poorer logs.

*TN 285 _____ 1947. Log grade following selection cutting in northern hardwoods.

STATION PAPERS

Order No. 5/

SP 1 Revised forest statistics for the Lake States, 1945. Lake States Forest Experiment Station, 27 pp. 1946.

SP 2 Postwar problems of the cross tie industry in the Lake States. Arthur G. Horn and Harold F. Scholz, 14 pp. 1946.

*SP 3 Estimating cull in northern hardwoods. W. M. Zillgitt and S. R. Gevorkiantz, 7 pp. 1946.

SP 4 The reforestation job in the Lake States--a new estimate. Paul O. Rudolf, 9 pp. 1946.

*SP 5 Lake States forests and the pulp and paper industry. E. L. Demmon, 10 pp. 1946.

*SP 6 Some forest-wildlife problems in the Lake States. Shaler E. Aldous, 11 pp. 1947.

*SP 7 Growth and yield of jack pine in the Lake States. S. R. Gevorkiantz, 11 pp. 1947.

SP 8 Spacing of young red pine. F. H. Eyre and Paul J. Zehngraff, 6 pp. 1947.

SP 9 How can research help the Michigan timber owner? E. L. Demmon, 9 pp. 1947.

*SP 10 Optimum economic stocking for northern hardwoods. W. M. Zillgitt, 14 pp. 1948.

*SP 11 Balsam fir seed: Its characteristics and germination. Eugene I. Roe, 13 pp. 1948.

*SP 12 An improved increment-core method for predicting growth of forest stands. S. R. Gevorkiantz and Lucille P. Olsen, 19 pp. 1948.

5/ Only the order number is needed when Station Papers are requested.

Order No.

*SP 13 Forestry situation in the Lake States. E. L. Demmon, 6 pp. 1948.

*SP 14 Hybrid poplar planting in the Lake States. Paul O. Rudolf, 17 pp. 1948.

SP 15 Publications of the Lake States Forest Experiment Station, 1923-1948. Also suppl., 1949-1951. Lake States Forest Experiment Station. 1951.

*SP 16 Forest fire burning conditions in the Lake States. John S. Crosby, 17 pp. 1949.

*SP 17 Control of weeds in conifer nurseries by mineral spirits. J. H. Stoeckeler, 23 pp. 1949.

*SP 18 Winter injury and recovery of conifers in the upper Midwest. J. H. Stoeckeler and Paul O. Rudolf, 20 pp. 1949.

*SP 19 The place of forestry in the economic development of the Park Falls area, Wisconsin. Howard W. Mayne, 24 pp. 1949.

*SP 20 Commodity drain from forests of the Lake States, 1948. Arthur G. Horn, 35 pp. 1950.

*SP 21 Size-class distribution in old-growth northern hardwoods twenty years after cutting. F. H. Eyre and W. M. Zillgitt, 15 pp. 1950.

*SP 22 Growth and yield of upland balsam fir in the Lake States. S. R. Gevorkiantz and Lucille P. Olsen, 24 pp. 1950.

*SP 23 Reforestation research findings in northern Wisconsin and Upper Michigan. J. H. Stoeckeler and G. A. Limstrom, 34 pp. 1950.

*SP 24 Reducing mortality in old-growth northern hardwoods through partial cutting. F. H. Eyre and F. R. Longwood, 13 pp. 1951.

SP 25 Changes in forest conditions 1936-1949, north-central Minnesota and Upper Peninsula of Michigan (A preliminary analysis). R. N. Cunningham, 20 pp. 1951.

*SP 26 Quality of logs and lumber obtained from an improvement cut in second-growth hardwoods in northern Wisconsin. Carl Arbogast, Jr., 17 pp. 1951.

Order No.

*SP 27 Reproduction on cutover swamplands in the Upper Peninsula. Zigmond A. Zasada, 15 pp. 1952.

*SP 28 Burning index ratings in fire control planning. J. A. Mitchell, 13 pp. 1953.

*SP 29 Some aspects of managing second-growth woodlands in Upper Michigan. F. R. Longwood, 17 pp. 1953.

*SP 30 Tests of a portable wood chipper. J. L. Arend, R. N. Smith, and R. A. Ralston, 37 pp. 1954.

*SP 31 Forest statistics for Minnesota, 1953. Paul C. Guilkey, Bernard Granum, and R. N. Cunningham, 36 pp. 1954.

*SP 32 A review of literature relating to quaking aspen sites. M. L. Heinselman and Z. A. Zasada, 61 pp. 1955.

*SP 33 Oak wilt damage--a survey in central Wisconsin. R. L. Anderson and D. D. Skilling, 11 pp. 1955.

*SP 34 Forest management lessons from a 1949 windstorm in northern Wisconsin and Upper Michigan. J. H. Stoeckeler and Carl Arbogast, Jr., 11 pp. 1955.

MISCELLANEOUS REPORTS

Order No. 6/	
*MR 1	A survey of farm-forestry research and demonstration needs in southern Minnesota. John R. Neetzel, 22 pp. 1947.
*MR 2	Forest types and condition classes in the Lake States. Lake States Forest Experiment Station, 7 pp. 1948.
*MR 3	Handling northern white-cedar stands for wood and wildlife in the Lake States. Paul O. Rudolf, 6 pp. 1949.
MR 4	Allowable cut. P. C. Guilkey and S. R. Gevorkiantz, 8 pp. 1949.
*MR 5	Pelleted seed for reforestation. Paul O. Rudolf, 13 pp. 1949.
*MR 6	Farmwoods management in southern Minnesota. John R. Neetzel, 28 pp. 1949.
*MR 7	Commodity drain from forests of the Lake States, 1946. Arthur G. Horn, 31 pp. 1950.
MR 8	Forest seed collectors, processors, and dealers in the Lake States. Paul O. Rudolf, 3 pp. 1950.
*MR 9	Commodity drain from forests of the Lake States, 1947. 31 pp. 1950.
*MR 10	Aspen management problems of the Lake States. Z. A. Zasada, 23 pp. 1950.
MR 11	Forestry in North Dakota. E. L. Demmon, 8 pp. 1950.
*MR 12	A survey of the use of native woods and other building materials on southern Minnesota farms. John R. Neetzel, 29 pp. 1950.

6/ Only the order number is needed when Miscellaneous Papers are requested.

Order No.

*MR 13 Balsam fir in Minnesota: A summary of present knowledge. Eugene I. Roe, 25 pp. 1950.

*MR 14 Certifying forest seeds. Paul O. Rudolf, 6 pp. 1950.

MR 15 Chemical control of brush and tree growth for the Lake States. Paul O. Rudolf, 30 pp. 1951.

MR 16 A national policy for timberlands. E. L. Demmon, 5 pp. 1951.

MR 17 Recent trends in Lake States timber resources and industries. M. B. Dickerman, 9 pp. 1951.

*MR 18 Commodity drain from forests of the Lake States, 1950. Arthur G. Horn, 24 pp. 1952.

*MR 19 Commodity drain from forests of the Lake States, 1949. Arthur G. Horn, 24 pp. 1951.

*MR 20 Low temperature seed storage for western conifers. Paul O. Rudolf, 8 pp. 1952.

MR 21 Proceedings Lake States Forestry Clinic on using chemical controls in forest management. Lake States Forest Experiment Station, 68 pp. 1953.

*MR 22 Lake States Forest Genetics Conference, March 31-April 1, 1953. Lake States Forest Genetics Conference, 83 pp., 1953.

*MR 23 Managing northern hardwoods in the Lake States. Carl Arbogast, Jr., 11 pp. 1953.

*MR 24 The work area and program of the Headwaters Forest Research Center. Lake States Forest Experiment Station, 17 pp. 1953.

MR 25 Larch sawfly conditions in the Lake States in 1953. L. C. Beckwith, 6 pp. 1954.

*MR 26 Commodity drain from forests of the Lake States. Arthur G. Horn, 25 pp. 1954.

*MR 27 Lake States forest fire damage tables for young second-growth stands. J. A. Mitchell, 6 pp. 1954.

Order No.

MR 28 The forest insect situation in the Lake States in 1953. L. C. Beckwith and H. J. MacAloney, 7 pp. 1954.

*MR 29 Some thoughts on forest fire damage appraisal. J. A. Mitchell, 4 pp. 1954.

*MR 30 Potential productivity of forest lands in Pine, Carlton, Aitkin, and Southern St. Louis Counties. Z. A. Zasada, M. L. Heinselman, and G. K. Voigt, 53 pp. 1954.

*MR 31 The changing forests of the Lake and Central States Region. M. B. Dickerman, 10 pp. 1954.

*MR 32 Forest-fire control in the Lake States. J. A. Mitchell, 11 pp. 1954.

*MR 33 Forest plantation release--what it is, how to do it. E. I. Roe, 29 pp. 1955.

*MR 34 Larch sawfly conditions in the Lake States in 1954--a reconnaissance survey. L. C. Beckwith, 8 pp. 1955.

*MR 35 Tree races and forest tree improvement. Paul O. Rudolf, 8 pp. 1955.

*MR 36 The more important forest insects in the Lake States in 1954. L. C. Beckwith and H. J. MacAloney, 9 pp. 1955.

MR 37 Aerial brush control in Lake States forests. Eugene I. Roe, 9 pp. 1955.

*MR 38 Photo-interpretation aids. Clarence D. Chase, 13 pp. 1955.

*MR 39 Proceedings of the Lake States aerial brush control meeting and tour, July 26-28, 1955. Lake States Forest Experiment Station, 38 pp. 1955.

*MR 40 Second Lake States Forest Tree Improvement Conf. Proc. Second Lake States Forest Tree Improvement Conference, 108 pp. 1955.

ASPEN REPORTS

(Initiated in 1947 and terminated in 1951.)

Order No. 7/	
*AR 1	Aspen properties and uses. Zigmond A. Zasada, 9 pp. 1947.
*AR 2	Aspen availability and supply. Clarence D. Chase, 15 pp. 1947.
*AR 3	Logging methods and peeling of aspen. T. Schantz-Hansen, 14 pp. 1948.
*AR 4	Milling of aspen into lumber. C. J. Telford and F. B. Malcolm, 9 pp. 1947.
*AR 5	Seasoning of aspen. Harvey H. Smith, 19 pp. 1947.
*AR 6	Aspen lumber grades and characteristics. Zigmond A. Zasada, 9 pp. 1948.
*AR 7	Mechanical properties of aspen. R. P. A. Johnson, 16 pp. 1947.
*AR 8	Machining and related properties of aspen. Edward M. Davis, 8 pp. 1947.
*AR 9	Aspen lumber for building purposes. Louis W. Rees, 11 pp. 1947.
*AR 10	Aspen for containers. Waldo Sands, 12 pp. 1947.
*AR 11	Aspen for core stock. Arlie W. Toole, 9 pp. 1947.
*AR 12	Dimension stock and other uses of aspen. Alexis J. Panshin, 18 pp. 1950.
*AR 13	Aspen for veneer. Hereford Garland, 10 pp. 1948.
*AR 14	Aspen for pulp and paper. E. R. Schafer, 10 pp. 1947.
*AR 15	Aspen for cabin logs. Albert W. Sump, 12 pp. 1947.

7/ Only the order number is needed for Aspen Report requests.

Order No.

*AR 16 Aspen for excelsior. Hereford Garland, 10 pp. 1949.

*AR 17 Aspen defiberization and refining of product. Robert Craig, Jr., 4 pp. 1948.

*AR 18 Chemical utilization of aspen. Geo. J. Ritter and Ralph L. Hossfeld, 19 pp. 1947.

AR 19 The preservative treatment of aspen. Frank H. Kaufert, 19 pp. 1948.

*AR 20 Marketing of aspen. Zigmond A. Zasada, 10 pp. 1949.

*AR 21 Possibilities of managing aspen. Paul Zehngraff, 23 pp. 1947.

*AR 22 Enemies of aspen. Clyde M. Christensen, Ralph L. Anderson, A. C. Hodson, and Paul O. Rudolf, 16 pp. 1951.

AUTHOR INDEX

Name	Page Nos.
Aamodt, E. E.	11, 18, 61
Aikman, J. M.	35
Aldous, Clarence M.	52, 53
Aldous, Shaler E.	53, 54, 55, 56, 105
Amidon, George B.	84
Anderson, R. L.	52, 105
Anderson, Robert T.	65
Arbogast, Carl F.	3, 21, 24, 25, 27, 28, 30, 84, 95, 105
Arend, John L.	21, 38, 40, 66, 84, 85, 88, 91, 95, 97, 103, 111
Averell, James L.	3, 21, 25, 31, 38, 44, 52, 56, 60
Baskin, L. C.	18
Bates, C. G.	11, 31, 35, 37, 39, 40, 56, 57, 91, 102
Batzer, H. O.	48, 49
Bean, James L.	48, 50
Beckwith, L. C.	48, 49
Benjamin, Daniel M.	48, 105
Blythe, R. H., Jr.	13, 25, 60, 66
Briggs, A. H.	12, 54
Brown, R. M.	21, 60
Chase, Clarence D.	3, 61, 67, 68, 108
Conover, David F.	97
Creighton, J. W.	85, 117
Crosby, John S.	45, 103
Cunningham, R. N.	3, 8, 47, 68, 69, 70, 71, 75, 77, 78, 83, 84, 85 112, 113
Demmon, E. L.	4, 69, 78, 85, 117
Dickerman, M. B.	4, 21, 31, 70, 75, 78, 79, 80, 85
Diemer, Jack A.	71
Dortignac, E. J.	37
Drooz, Arnold T.	49, 50, 51, 105
Duerr, William A.	25, 61, 62, 63, 84
Elkins, W. A.	54
Engle, LaMont G.	21, 22, 23, 96, 97, 117
Ewan, H. G.	49
Eyre, F. H.	12, 22, 24, 25, 26, 29, 30, 57, 79, 96
Farrington, Robert A.	26, 41
Findell, Virgil	112

Name	Page Nos.
Fisher, P. L.	12, 54
Frank, Bernard	5, 77, 79, 83
Gensch, R. H.	56
Gevorkiantz, S. R.	5, 12, 14, 26, 32, 36, 57, 60, 61, 62, 63, 64, 66, 67, 79, 85, 101, 108, 109, 117
Graham, S. A.	50
Godman, R. M.	117
Guilkey, Paul C.	64, 70, 72, 73, 109, 111
Gunderson, Wallace R. H.	111, 117
Gysel, Leslie W.	40, 103
Heinselman, M. L.	24, 57, 80, 96, 98, 105, 106
Hesterberg, Gene	118
Holcomb, Carl J.	70, 85, 86
Holmberg, L. A.	86
Horn, Arthur G.	67, 68, 70, 72, 73, 75, 76, 86, 113, 114
Huey, Ben M.	77
Johnson, Richard C.	76, 86, 118
Kittredge, Joseph	5, 12, 22, 26, 30, 32, 38, 40, 57, 64, 66, 86
Kluender, W. A.	18, 86, 89, 114
Krefting, Laurits W.	54, 55, 56, 106
LeBarron, Russell K.	13, 26, 30, 40, 45, 55, 57, 64, 84, 87, 99
Limstrom, G. A.	19
Longwood, F. R.	25, 27, 30, 79, 87, 96, 99, 116, 118
MacAloney, H. J.	32, 48, 49, 51
Macon, John W.	62, 71, 77
Mayne, Howard W.	79, 116
McCulley, Robert D.	32
Meuli, Lloyd J.	17, 18, 32
Mitchell, J. A.	7, 13, 40, 41, 45, 46, 47, 79, 80, 104, 105
Moore, Francis I.	77
Morgan, J. T.	118
Moser, H. C.	68, 69, 71, 80, 83
Mowat, E. L.	7, 22, 27, 29
Neetzel, John R.	7, 25, 30, 40, 77, 85, 86, 87, 103, 113, 116, 117, 118
Neff, L. P.	7, 27, 99, 100
Nienstaedt, Hans	32
Office of Iron Range Resources & Rehabilitation	71, 72
Olson, George T.	66
Olsen, Lucille P.	62, 64, 109, 116
Quinney, D. N.	118

Name	Page Nos.
Ralston, R. A.	13, 23, 27, 58, 64, 80, 85, 88, 94, 95, 97 100, 108
Richman, H. W.	46
Roe, Eugene I.	7, 12, 13, 14, 19, 23, 27, 30, 41, 54, 55, 57, 58, 80, 94, 97, 100, 108, 118
Rudolf, Paul O.	5, 11, 12, 14, 15, 16, 17, 19, 23, 26, 27, 30, 32, 33, 36, 41, 51, 52, 55, 57, 58, 94, 100, 102, 106, 108
Salminen, W. A.	23, 117, 119
Samson, N. T.	67
Sands, Waldo M.	88, 119
Sauer, K. W.	7
Scholz, Harold F.	24, 28, 31, 36, 41, 42, 43, 47, 60, 62, 63, 64, 65, 86, 88, 94, 97, 100, 108, 116, 119
Shirley, Hardy L.	11, 12, 17, 18, 24, 27, 32, 34, 58, 59, 65
Skilling, D. D.	52
Stoddard, Charles H.	25
Stoeckeler, J. H.	3, 7, 8, 12, 18, 19, 20, 23, 24, 27, 28, 34, 35, 36, 37, 41, 42, 51, 55, 59, 62, 65, 67, 88, 94, 95, 97, 100, 102, 105, 106, 112
Stoltz, E. R.	62
Strothmann, R. O.	102
Thames, John L.	42
Tobiaski, Robert	42
Vogel, Frederick H.	88
Wackerman, A. E.	8, 28, 40, 60, 65, 73, 80
Wall, M. L.	38
Ware, E. R.	20, 73
White, Charles H.	86, 89
White, H. G.	8, 69, 80, 89
Wijkstrom, Stig	67
Wisconsin Conservation Department	73, 74
Zasada, Z. A.	24, 28, 31, 57, 80, 81, 85, 87, 89, 113, 117, 11
Zehngraff, Paul J.	8, 20, 22, 24, 28, 30, 31, 51, 57, 65, 66, 81, 96, 97, 101, 108, 111, 112, 117, 119
Zillgitt, W. M.	25, 28, 29, 30, 62, 81, 101, 111, 117, 119
Zon, Raphael	3, 5, 8, 9, 10, 11, 29, 31, 34, 37, 38, 43, 44, 58, 60, 63, 65, 74, 77, 81, 82, 83, 84, 90